JOURNAL OF PROJECTIVE TECHNIQUES

L. 23 MARCH, 1959 No. 1

• • •

EDITOR

BRUNO KLOPFER

EXECUTIVE EDITOR

BERTRAM R. FORER

ASSOCIATE EXECUTIVE EDITORS

WALTHER JOEL
JEANNE M. REITZELL
EDWIN S. SHNEIDMAN

STAFF EDITORS

EVELYN CRUMPTON
FLORENCE DIAMOND
HERMAN FEIFEL
FRED J. GOLDSTEIN
JAMES HOLT
NICHOLAS ROSE
LEONARD B. OLINGER
JEANNE M. REITZELL
JOHN WEIR
IRLA LEE ZIMMERMAN

CONSULTING EDITORS

JOHN E. BELL
EUGENIA HANFMANN
ROBERT R. HOLT
LOIS B. MURPHY
MARIA A. RICKERS-OVSIANKINA
L. JOSEPH STONE

The Effect of Inquiry Method on Rorschach Color and Shading Scores[1,2]

E. EARL BAUGHMAN
University of North Carolina

A number of problems associated with the Rorschach inquiry as traditionally conducted were discussed in a previous article (1). A new inquiry technique (called the paired comparison method) was also described in some detail. This paper will present the results of an experiment designed to show how the frequency of color and shading scores may or may not vary as a function of the inquiry method that is used.

PROCEDURE

Experimental Design: The Rorschach was administered to one group of 81 adult Ss in the manner described by Beck (2). A second group of 81 adult Ss responded to the blots with identical instructions for the free association period, but these Ss were given the paired comparison inquiry instead of the standard inquiry. Assignment of Ss to the two groups was on a random basis. After the two groups were formed they were compared with respect to sex, age, education, and intelligence; they did not differ significantly on these variables.

Subjects: All home office employees of two insurance companies were permitted to leave their desks to participate as volunteer Ss in this research. Ss whose ages exceeded 50 years were asked not to volunteer, however. All occupational levels were well represented, from file clerk up through that of vice-president. Age, sex, intelligence, and education characteristics of the two groups are presented in Table I.

TABLE I—Subject Characteristics

		Standard Inquiry Group (N=81)	Paired Comparison Inquiry Group (N=81)
Age:	Mean (in years)	26.8	26.6
	S.D.	7.6	7.5
Intelligence*:	Mean	54.9	54.6
	S.D.	16.4	19.2
Sex:	Male	18	11
	Female	63	70
Education:	Completed High School	46	45
	Beyond High School	35	36

*Table entries are based upon raw scores from Thurstone Test of Mental Alertness, Form A (4).

Examiners: Two Es were used, one male and one female. They were given the same training in conducting the paired comparison inquiry; both had previous experience in conducting the standard inquiry. Each E tested equal numbers of Ss in the two groups.

Testing Procedure: E began by having each S provide personal history data. The free association to the Rorschach followed, each of the 162 Ss receiving the same instructions. Half of the Ss were then given the standard inquiry and half the paired comparison inquiry, it having been determined before testing began the group into which S would be placed. Upon completion of the inquiry each S was administered form A of the

---

[1] This investigation was supported by a research grant (M-1027) from the National Institute of Mental Health, National Institutes of Health, Public Health Service.

[2] The author is grateful to H. M. Grainer, Patricia M. Waller, S. L. Guskin, R. L. Van de Castle, Frances C. Campbell, and P. B. Fiddleman for their assistance in the collection and analysis of the data. Subject time and testing facilities were donated by the Jefferson Standard Life Insurance Co. and the Pilot Life Insurance Co.

Thurstone Test of Mental Alertness (4) to determine intellectual level.

Scoring: Two persons (not the Es) independently scored each of the 162 protocols for shading and color. The basic question asked with regard to each response was whether the data indicated color and/or shading to be a determinant of that response. In this way each scorer computed two total scores for each S in each of the two groups: one score indicated the total number of responses for which S had noted a color determinant, the other score indicated the total number of responses for which S had noted a shading determinant. If the two scorers differed on a total score for a S, the score assigned to that S was the mean of the two scores. Interscorer reliabilities for total scores computed in this manner for shading and color for both the standard and paired comparison inquiries were quite high, product-moment correlation coefficients ranging between .90 and .97. For the purposes of this initial investigation, no attempt was made to distinguish between the various ways in which shading might be used (Y, V, T, etc.) nor was there an analysis in terms of form dominance (e.g., C vs CF vs FC). The question concerned simply the frequency with which shading and color were suggested as determinants under the two inquiry methods.

RESULTS

The frequencies of various color and shading scores for the two types of inquiry for the total group (N=162) are presented on the left side in Table II. The mean number of responses involving a color determinant for the standard inquiry group (hereafter referred to as Group S) was 4.7; for the paired comparison inquiry group (hereafter referred to as Group PC) the mean was 4.4. This difference does not permit rejection of the null hypothesis. Shading scores were significantly higher (p=<.001), however, for Group PC than for Group S. The mean for Group PC was 10.6 compared to 6.3 for Group S.

Groups S and PC also differed in productivity (for Group PC $\overline{X}$ productivity = 21.1; for Group S $\overline{X}$ productivity = 23.1). To control for this factor, two new groups were formed so as to be carefully equated for productivity as well as age, sex, education, and intelligence. There were 43 Ss in each of these new groups. The right side of Table II presents the frequencies of various

TABLE II—Frequencies of Shading and Color Scores as a Function of Inquiry Method

	Total Group				Groups Matched for R			
	Color		Shading		Color		Shading	
Scores	Standard Inquiry	Paired Comparison Inquiry	Standard Inquiry	Paired Comparison Inquiry	Standard Inquiry	Paired Comparison Inquiry	Standard Inquiry	Paired Comparison Inquiry
0-1	16	14	18	1	13	9	11	0
2-3	21	27	15	6	9	16	11	4
4-5	20	18	12	9	9	9	8	7
6-7	9	11	11	12	7	5	4	7
8-9	5	4	7	12	2	3	3	6
10-11	4	2	8	17	2	0	4	8
12-13	3	3	2	5	1	1	2	2
14-15	1	0	0	5	0	0	0	4
> 15	2	2	8	14	0	0	0	5
N	81	81	81	81	43	43	43	43
Mn	4.7	4.4	6.3	10.6	3.7	3.6	4.3	9.4
Mdn	3.8	3.5	4.9	9.6	3.4	3.1	3.4	8.7
S.D.	4.1	3.8	6.2	6.4	3.1	2.7	3.7	5.1

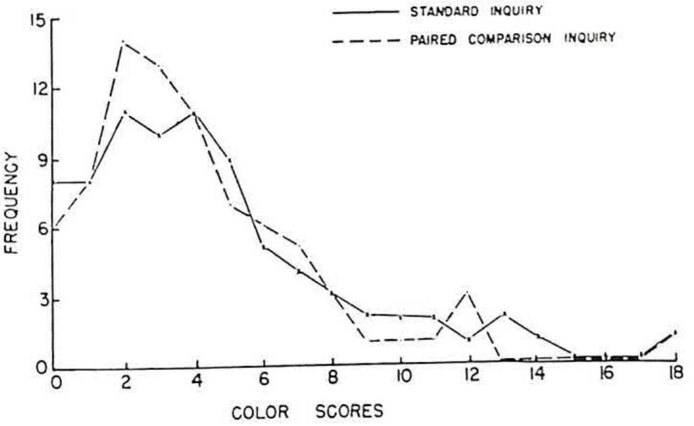


FIG. 1—Frequencies of Color Scores as a Function of Inquiry Method.

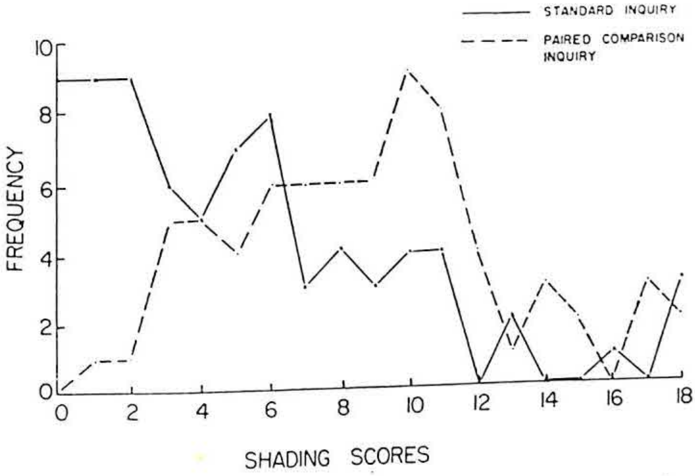


FIG. 2—Frequencies of Shading Scores as a Function of Inquiry Method.

color and shading scores for each of these matched groups. Again the data clearly indicate no significant difference in color scores attributable to inquiry method, but a significantly higher number of shading responses with the paired comparison technique ($p = < .001$).

Examination of Table II also reveals that the distribution of shading scores for Group PC is more symmetrical around a mean significantly displaced from zero than is true of the distribution of scores for Group S. The latter distribution is much more positively skewed with a piling up of scores in the 0-3 range. No comparable differences can be noted between the distributions of color scores for Groups S and PC. Figures 1 and 2 show these distributions of color and shading scores as a function of inquiry method. (Scattered scores beyond 18 have not been plotted.)

DISCUSSION

The major conclusion suggested by this experiment is that the number of responses involving shading as a determinant may be significantly underestimated by the inquiry as traditionally given. The matched group analysis indicates that the frequency of such responses may be more than twice as great as heretofore thought. In contrast, the number of responses involving a color determinant is quite stable, i.e., independent of inquiry method.

Our anticipation had been that both shading and color scores would be significantly greater under the paired comparison method. This expectation was based upon two beliefs: (1) that a significant number of responses involve shading and color determinants which S is ordinarily unable to verbalize, and (2) that the paired comparison technique is likely to be more suggestive regarding color and shading, thus leading S to give shading and color determinants where they are inappropriate. The actual findings make it necessary to re-examine these beliefs.

The fact that there was no increase in the number of color scores appears to rule out suggestiveness as a major contributing factor in the paired comparison technique. It also indicates that most normal Ss are probably able to recognize color as a determinant of their responses under the standard inquiry method when it has in fact been a determinant; otherwise there would have been an increase in color scores with the paired comparison method. Thus the beliefs noted above are not supported by this experiment with respect to the color variable.

These findings regarding color in turn increase the likelihood that the significant gain in shading scores is not a result of suggestiveness but rather is attributable to the fact that many Ss do not recognize the influence that shading has on their responses, hence they do not so readily verbalize its role in the standard inquiry. The significance of shading becomes much more apparent to Ss as a result of the changes made in the stimulus in the paired comparison inquiry. Shading thus seems to affect S's perception without S being immediately aware of its effect; color does not operate as subtly and S is more aware of the fact that his response is somehow dependent upon hue.

From a psychometric viewpoint many Rorschach scores (including color and shading) have distributions with undesirable properties (i.e., marked skewness, many zero scores, etc.). Holtzman (3) has attempted to overcome these deficiencies by the development of a new ink blot test, using 45 figures chosen so as to give reasonably normal distributions for six variables, including shading and color. It is interesting to note that the paired comparison inquiry also gives a distribution of shading scores with more desirable psychometric properties, but such cannot be said for the distribution of color scores. Nor can it be expected that the paired comparison method will affect the distributions of the other variables with which Holtzman is concerned.

In this article we have emphasized the quantitative effects of inquiry method on shading and color scores. When working with Ss and their protocols, however, the most impressive thing is not easily summarized in numbers. Reference here is to the fact that E usually gets a much more penetrating idea of how S has experienced the stimulus when a paired comparison inquiry is used than is the case with the standard inquiry. In talking about two blots which differ in an objective way S usually gives E a much better idea of what these things mean to him than when he talks about a single stimulus. S's concern with form-color congruity, distracting effects of color, aesthetic preferences, affective experiences, attention creating properties, life-like attributes, and many other stimulus related experiences come more readily to the fore. The range, depth, and complexity of S's experience while viewing the blots seems somehow to be more apparent under the paired comparison method.

SUMMARY

The Rorschach was administered to two groups of adult Ss equated for intelligence, education, age, and sex. Shading and color scores were deter-

mined for one group by the standard inquiry method, for the second group by the paired comparison technique. Color scores for the two groups were not significantly different, but shading scores were significantly more frequent ($p = < .001$) with the paired comparison technique.

REFERENCES

1. Baughman, E. E. A new method of Rorschach inquiry. *J. proj. Tech.*, 1958, *22*, 381-389.

2. Beck, S. J. *Rorschach's test. I. Basic processes.* New York: Grune & Stratton, 1949.

3. Holtzman, W. H. Objective scoring of projective tests. Paper read at symposium on objective approaches to personality assessment, Louisiana State University, February, 1958.

4. Thurstone, Thelma G., & Thurstone, L. L. *Thurstone test of mental alertness, form A.* Chicago: Science Research Associates, 1952.

Received June 2, 1958

Crossvalidation of "Primary" and "Reactive" Personality Patterns with Non-Ulcer Surgical Patients[1]

LESLIE BERGER
Staunton Clinic, University of Pittsburgh

From an empirical analysis of projective test records of the same small group of subjects, Blum and Kaufman (3) and Marquis, Sinnett, and Winter (4) differentiated two patterns of personality dynamics. These two patterns were designated as "Primary" and "Reactive" types. To further investigate these findings, Winter (5, 6), devised two measures that he called Primary and Reactive scales from the Blacky Pictures. The Primary scale describes an individual who is overtly dependent, demanding, disgruntled, and immature. The Reactive scale measures the personality patterns more typically thought to characterize the business executive with ulcer: overt self sufficiency, high achievement drive, and little ability to express or tolerate his own dependency. In this study, Winter concluded that no single description of personality applies to all peptic ulcer patients, but at least two different personality types are found in people with ulcers, and these can be validly measured by the Blacky scales. These scales were validated by predicting relationships with Rorschach variables and biographical data found in V. A. records. In the present study, we wanted to know: (a) to what extent the validating Rorschach relationships with the Blacky scales remain stable in a new population; and, (b) to what degree do peptic ulcer patients differ from another group in their scores on these scales?

Methods and Procedures

The subjects were 30 male patients from a Veterans Administration Hospital, who were recovering from minor surgery. They were comparable with Winter's subjects inasmuch as they were of at least average intelligence and were between 20 and 45 years of age. According to their medical records and interview statements, none of our subjects had ever been diagnosed as having ulcer.

The Blacky Pictures were administered in small groups, and the Rorschach was given individually. In order to evaluate Winter's *original* and *revised* scoring systems, the Blacky Pictures were scored according to both systems.

First, the *construct validity* of the Blacky scales was tested on a new sample. This was done by selecting predictions, adapted from Winter, about the relationship between the subjects' scores on each of these scales and selected criterion variables from the Rorschach test.

Predicted relationships:

a. Animal movement (FM)
   Positive relationship between number of FM and Primary score;
b. Color-form (CF)
   Positive relationship between CF and Primary score and/or negative relationship between CF and Reactive score;
c. Color-form and pure color (CF+C)
   Positive relationship between CF+C and Primary score and/or negative relationship between CF+C and Reactive score;
d. Percent of human content (H%)
   Positive relationship between H% and Primary score and negative re-

---

[1] The author is especially indebted to Dr. Bernard Chodoroff, who assisted in matters of experimental design, to Miss Essene Joseph, who administered the Rorschach, and to Dr. William G. Shipman, who gave many constructive suggestions for writing the manuscript. Acknowledgment is due also the staff at the Dearborn Veterans Administration Hospital for their fine cooperation.

lationship between H% and Reactive score;

Secondly, the Blacky scale scores of Winter's group and those of the present study were compared by using the chi-square technique.

RESULT AND DISCUSSION

Winter's original scoring system

Due to the questionable interscoring reliability of Rorschach scoring categories like "Awareness of Conflict in the Self," "Nonconstricted Psychogram," and "Texture," this writer used only FM, FM%, CF, CF +C and H% of Winter's predicted Rorschach relationships. Table I presents the findings. While two of the three predicted Rorschach-Primary scale relationships were found to be statistically significant, none of the three predicted Rorschach-Reactive scale relationships approached significance. These results are in general agreement with the findings of Winter, who found four of the predicted six Primary-Rorschach relationships to be significant, and, from the predicted five Reactive-Rorschach relationships found only one to be significant.

TABLE I—Significance Levels for Predicted Relationships Between Rorschach Variables and Blacky Scales[a]

Rorschach Variable	Blacky Primary Scale X^2	p^b	Blacky Reactive Scale X^2	p^b
1. FM	1.70	.10	Not Predicted	
FM%	1.70	.10	Not Predicted	
2. H%	0.52	N.S.[c]	0.00	N.S.
3. CF	3.05	.05	0.00	N.S.
CF+C	5.50	.01	0.12	N.S.

[a] Scored according to Winter's original scoring system

[b] One-tailed test employed here

[c] Not significant

TABLE II—Comparisons of Berger's Non-Ulcer Patients with Winter's Ulcer Patients on Blacky Scale Patterns[a]

Blacky Pattern	Berger's Non-Ulcer Sample N=30	Winter's Ulcer Sample N=68	X^2	p^b
High Primary score	19	30	2.35	N.S.
Low Primary score	11	38		
High Reactive score	8	34	5.63	.02
Low Reactive score	22	34		
High Primary and High Reactive scores	5	14	2.97	.10
High Primary and Low Reactive scores	14	16		
Low Primary and Low Reactive scores	8	18	1.30	N.S.
Low Primary and High Reactive scores	3	20		

[a] Scored according to Winter's original scoring system

[b] Two-tailed test employed here

To determine the differences in personality paterns, in terms of scores on the Primary and Reactive scales, between Winter's ulcer patients[2] and the non-ulcer, surgical controls, the chi square technique was applied. These results appear in Table II: The results in this table indicate that a significantly greater number of ulcer than non-ulcer patients scored high on the Reactive scale. Further, when we take into consideration the scores on the Primary and Reactive scales simultaneously, the ulcer patients are characterized by high scores on both the Primary and Reactive scales. Among the non-ulcer patients, a high score on the Primary scale combined with a low score on the Reactive scale was the dominant personality pattern. In other words, although dependency conflicts were common to both groups, the non-ulcer patients were able to accept their dependency, while the ulcer patients, as a group, gave evidence of strong needs for both acceptance and rejection of dependence.

---

[2] The data were made available by Dr. William D. Winter.

Winter's revised scoring system

On the basis of his findings, Winter subsequently revised his Blacky scales for the two dimensions. Table III contains the predicted relationships between the subjects' scores on each of the scales, scored according to the revised scoring system, and the Rorschach variables. As may be seen, CF+C was the only Primary scale-Rorschach relationship, and H% and CF were the two Reactive scale-Rorschach relationships, that were found to be statistically significant.

TABLE III—Significance Levels for Predicted Relationships Between Rorschach Variables and Blacky Scales[a]

Rorschach Variable	Blacky Primary Scale X^2	Blacky Primary Scale p^b	Blacky Reactive Scale X^2	Blacky Reactive Scale p^b
1. FM	0.67	N.S.	Not Predicted	
FM%	0.17	N.S.	Not Predicted	
2. H%	0.20	N.S.	3.00	.05
3. CF	1.17	N.S.	2.46	.10
CF+C	3.50	.05	0.36	N.S.

[a] Scored according to Winter's revised scoring system

[b] Two-tailed test employed here

The comparisons of the samples on the Primary and Reactive scales, scored according to the revised scoring system; appear in Table IV. The results in this table indicate no statistically significant difference between these samples.

In general, the validating Blacky scale-Rorschach relationships were confirmed in a new sample. As to whether the original or revised scoring system is better, the answer is unclear. There is some suggestion, however, that in the new scoring system the Reactive scale has been improved, but the Primary scale has been reduced in accuracy.

When we attempt to interpret our findings in regard to differences between ulcer and non-ulcer patients' personality patterns, we are faced with a dilemma. The two scoring systems yield different results. Any clarification must come from further empirical investigation. According to Winter (6), "a high score on both scales involves contradictions since one cannot simultaneously accept and reject one's passivity." Logically, Winter's assumption is correct. Projective tests, however, supposedly measure unconscious impulses and needs. If so, then it is not contradictory to find, on projective tests, an individual expressing strong impulses both to accept and to reject his passivity. Accordingly, it is not unlikely that individuals with strong, inconsistent unconscious impulses are those who develop psychosomatic symptoms.

Our findings do not negate Winter's statement that "at least two different personality patterns are found in people with ulcers," as *measured by the Blacky scales.* These patterns, however, are also found in patients

TABLE IV—Comparisons of Berger's Non-Ulcer Patients with Winter's Ulcer Patients on Blacky Scale Patterns[a]

Blacky Pattern	Berger's Non-Ulcer Sample N=30	Winter's Ulcer Sample N=68	X^2	p^b
High Primary score	16	40	1.57	N.S.
Low Primary score	14	28		
High Reactive score	15	35	0.12	N.S.
Low Reactive score	15	33		
High Primary and High Reactive scores	5	18	1.55	N.S.
High Primary and Low Reactive scores	11	22		
Low Primary and Low Reactive scores	4	11	1.05	N.S.
Low Primary and High Reactive scores	10	17		

[a] Scored according to Winter's revised scoring system

[b] Two-tailed test employed here

who do not have peptic ulcer. Whether or not one or the other of these personality patterns is more frequent among ulcer patients than among other patients, remains to be investigated. In addition, the personality factors that Winter describes may be necessary but not sufficient as causes for the appearance of ulcer symptoms.

SUMMARY

The purpose of this study was to test the extent to which Winter's Primary and Reactive scales are valid for non-ulcer patients. The patterns of Winter's cases were compared with those of 30 non-ulcer, surgical patients. A number of predictions were also made about the relationships between the scores of these patients on these Blacky scales and corresponding Rorschach variables. The Blacky-Rorschach relationships were, in general, the same as those found by Winter.

When Winter's *original scoring system* was used, ulcer patients, as a group, scored higher than non-ulcer, surgical controls on both the Primary and Reactive scales, though there was some individual variability. When the patterns were scored according to the *revised scoring system*, no differences were found between the two samples. This discrepancy in the findings of the two Blacky scoring systems casts some doubt on the validity of at least one of them. Further research is needed to determine which (if either) is the more accurate.

REFERENCES

1. Blum, G. S. *The Blacky Pictures: a technique for the exploration of personality dynamics.* New York: Psychological Corporation, 1950.

2. Blum, G. S. Revised scoring system for research use of the Blacky Pictures. 1951. Mimeographed manuscript available from author.

3. Blum, G. S., and Kaufman, Jewel. B. Two patterns of personality dynamics in male peptic ulcer patients as suggested by responses in the Blacky Pictures. *J. clin. Psychol.*, 1952, *8*, 237-278.

4. Marquis, Dorothy P., Sinnett, R. E., and Winter, W. D. A psychological study of peptic ulcer patients. *J. clin. Psychol.*, 1952, *8*, 262-272.

5. Winter, W. D. The prediction of life history data and personality characteristics of ulcer patients from responses to the Blacky Pictures. Unpublished Ph.D dissertation, University of Michigan, 1953.

6. Winter, W. D. Two Personality Patterns in Peptic Ulcer Patients. *J. proj. Tech.*, 1955, *19*, 332-344.

Received April 28, 1958
Revision received September 8, 1958

A Normative Study of Rorschach "Sex Populars" for Males

ISRAEL W. CHARNY
University of Rochester[1]

Considerable interpretive emphasis is often placed on associations to Rorschach sexual areas in current clinical practice. These interpretations derive from the psychoanalytic theory of symbolism which is based on the analysis of dreams and free associations in psychotherapy, but they lack a firm basis in systematic research on the Rorschach itself.

Whether or not a given area is a sexual symbol is inferred from the responses which are typically attached to it, be they manifest sex responses or their symbolic equivalents. So far as the manifest sex response to the Rorschach is concerned, such responses are relatively rare in a normal population (2), and when they pile up they are most often a sign of serious psychopathology. There are now a variety of studies which show that a piling up of manifest sex responses is characteristic of schizophrenics (3, 5, 14), overt homosexuals (4, 7, 8, 9), and also patients with significant latent homosexual tendencies (18). In most cases, however, sex responses do not appear with sufficient frequency to permit extended study, especially in the way of establishing the differential stimulus-pull of various Rorschach locations for evoking sexual imagery.

The solution to this difficulty is to modify the standard Rorschach procedure, and this was first done by Shaw (16). Fifty college males were first given the opportunity to familiarize themselves with the cards by having them locate the Beck populars and circle the corresponding areas on a location chart. Then they were instructed to draw a circle around every area that appeared to them to pertain to sex, the sex organs, or the sex act and to label each as male, female, or either. From these data Shaw constructed a list of thirteen "sex populars" by including all those areas which were selected by ten or more of his Ss.

This study was replicated and extended by Pascal (15) with a larger group of Ss including both males and females as well as normals, neurotics, and psychotics. In this investigation, Ss were first administered a standard Rorschach, and then Shaw's technique was employed as a testing-the-limits procedure. The instructions were substantially the same, the Ss being asked to point out any male or female sex organs that they saw. Here too a list of populars was constructed, and Pascal's results for males correspond closely to Shaw's data (see Table I). Only three of Shaw's populars are not substantiated by Pascal who in turn lists two populars not previously identified by Shaw. Of the ten populars in common to both studies, there are two instances in which there is a difference in location, but in both cases this is merely a difference between a more limited and a more extended outlining of the same area.

The primary aim of both these studies was to establish which areas are sex populars. Neither pays very much attention to variations in responses, though Pascal does state that a great number of peculiar and odd responses were given. These were not reported, however, probably because responses were spread over such a wide variety of locations since, just as in Shaw's work, the procedure allowed the Ss to choose for themselves the areas to which they would respond.

---

[1] Now with Oakbourne Hospital, West Chester, Pennsylvania. This study is based on a doctoral dissertation completed at the University of Rochester. The author wishes to express his appreciation to the members of his advisory committee, Drs. Vincent Nowlis and Earl Telschow, and, especially, Dr. John Flavell.

It is even more difficult to find systematic normative data on symbolic responses to sexual areas. Standard scoring manuals list responses to these areas, of course, but they do not give the relative frequency of responses or indicate how frequently Ss see the same areas as sexual. Only one small attempt has been made to study what symbols Ss attach to those areas which they label as sexual in a testing-the-limits procedure, and this is in the same study by Pascal (15). The results indicate that an elongated object or human or animal appendage is likely to be called a penis in testing the limits for sex, and that there is similar but less presumptive evidence for the linking of vagina, breast, and anus with the symbolic equivalents ascribed to them in psychoanalytic theory. Here again, however, each S was free to respond to different areas on the limits procedure as well as on the original Rorschach so that the number of areas any one S responded to on both occasions was generally small. The result is that it is possible only to make a general statement about the relative correspondence of symbol and referent without examining more closely the consistency with which each Rorschach area evokes certain types of symbols.

METHOD

Fifteen Rorschach areas designated by Shaw and/or Pascal as "sex populars" for males were the focus of this study. These areas are listed in Table I. The specific structure which each area is assumed to represent is referred to as *designated identity*, while *designated gender* refers to the sex in which this organ is present.

This study concerns both manifest identifications of the "sex populars" as well as symbolic responses to the same areas. The major hypothesis in both cases is that the responses of both psychiatric patients and normals will be consistent with the sexual structures the Rorschach areas are assumed to represent.

The Rorschach cards were presented three times. In each case, Ss were directed specifically to these sexual areas so that all were responding to the same stimuli. A long-stemmed,

TABLE I—Rorschach "Sex Populars" for Males Designated by Shaw and Pascal

No.	Card	1950 Beck Location	Designated Gender	Source of Item	Designated Identity[f]
1.	I	Dd 22	F	Both	Vagina and Breast
2.	I	D 3[a]	F	Shaw	Vagina
3.	II	D 4	M	Both	Penis
4.	II	D 3	F	Both	Vagina
5.	III	Dd 26	M	Both	Penis
6.	III	Dd 27	F	Both	Breast
7.	III	D 7	F	Shaw	Vagina
8.	IV	D 3	F	Both	Vagina
9.	VI	D 2[b]	M	Both	Penis
10.	VI	D 12	F	Pascal	Vagina
11.	VI	D 10	M	Shaw	Testicles
12.	VII	D 6	F	Both	Vagina
13.	VIII	Dd 23	F	Both	Vagina
14.	IX	Dd 36[c]	F	Pascal	Vagina
15.	X	D 14[d]	M[e]	Both	Penis

[a]—Shaw also allows D 4

[b]—Shaw location is D 3

[c]—A new area not in Beck, essentially midline of D 6

[d]—Shaw location is D 11

[e]—Listed incorrectly in Shaw as F (personal communication)

[f]—Identity designated by Pascal except for items 2, 7, and 11 from Shaw who designates only gender

thin-pointed stylus was used to outline the areas so as not to obscure the rest of the blot. The aim was to focus attention on the specific areas chosen for study while leaving the contextual background of the blot as unchanged as possible.

In the first presentation, Ss were simply asked what each area looks like. The instructions here were those typically used in a standard Rorschach examination, and this procedure will be referred to as *free association (FA)*. In the second presentation, Ss were asked whether each area appears to be more masculine or feminine after it was explained to them that very often even familiar objects seem to have more of a masculine or feminine personality to us. This procedure of *masculine-feminine association (MF)* called for rapid, first associahons. Finally, the Ss were asked to think of each area specifically as a sexual part of the body, and this procedure will be referred to as *manifest sexual identification (MI)*.

Subjects

The experimental group consisted of 35 male, non-psychotic, non-homosexual patients undergoing psychiatric treatment at a general medical and surgical V.A. hospital. Ss were drawn only from the two open psychiatric wards. They were screened jointly by ward psychiatrists and psychologists to exclude all those with any history of overt psychotic symptoms or organic involvement, those having received insulin or ECT in the preceding six weeks, and any who were acutely ill or in need of special care at the time of the study. The research was described to these patients as a study of the processes of imagination in patients under psychiatric treatment when they are encouraged to use their imaginations freely.

A control group of 35 normal males were equated in age, education, and veteran status with the psychiatric patients. This control was considered important in view of Jones' (12) report that differences in perception of sexual symbols between normals and patients tend to wash out when the groups are not comparable in age and education. Ss ranged in age from 23 to 45 (M=33.49, SD=5.56), and in years of education from 6 to 17 (M=11.50, SD=2.19). They were drawn from the employees of an industrial plant, veterans who came into the offices of the V.A. in connection with veterans' benefits, V.A. employees, and members of the National Guard. In all cases, they were recruited on a voluntary basis. It was anticipated that placing participation on a truly voluntary basis would help screen out some of the more disturbed people in the groups approached. In addition Ss were screened by the Cornell Index (17). In sum, the control group consisted of actively employed individuals who did not report previous psychiatric illness or a significant number of current symptoms. These Ss were told that by studying the imagination of normal people who are able to use their imagination freely we could hope to learn how to help veterans who are emotionally disturbed.

Scoring

The first step in treating the Rorschach data was scoring for manifest sex responses on FA. These responses were then categorized according to whether they agreed or disagreed with the designated identity of the areas to which they were given. Responses which are consistent with the designated identity of the stimulus area are referred to as *appropriate,* and all others are considered *inappropriate.*

After scoring for sex responses, the remaining symbolic responses on FA were considered in terms of the psychoanalytic theory of symbols. Each response was typed on a separate index card, and then the cards were randomized in order to prevent patterning of patient-normal responses and to disguise the Rorschach locations to which they referred. In order to control for differences in richness of association, only the first response of an S was considered in those cases where more than one association was offered. In addition, verbalizations by Ss which did not directly modify the content of the responses were omitted from the material prepared for scoring.

The scoring was done by three independent judges who are psychoanalytically oriented clinical psychologists. Detailed instructions for this scoring will be found in the manual prepared for this purpose (6). The following ten categories were used:

penis
vagina
mixed: penis and vagina
intercourse
breast (s)
testicles
anal
anxiety
ambiguous
unscorable

Out of 630 responses, 73% were scored in the same category by all three judges, 23% were scored in the same category by two of the three judges, and only 4% of the data had to be discarded because of disagreements in scoring.

On MF and MI, scoring involved simply a tallying of responses, and again only the first uncorrected association was scored. In all cases, resistance scores *(don't know* responses) are not included in the major analysis of data since the focus throughout was on the content of the percepts.

RESULTS

The major hypothesis of this research was that responses to Rorschach sexual areas would show significant agreement with the designated identity of the areas to which they were given. Since there were only two significant differences on sixty comparisons of the responses of patients and normals with respect to appropriateness to the designated identity of the stimulus, the results that follow combine the two groups. Table II summarizes the results for each Rorschach area on each presentation of the blots.

It will be seen that under the conditions of this study the initial free-associative presentation of the cards evoked a considerably greater number of manifest sex responses than is typical on a standard Rorschach examination. Table II shows that there are 10 areas on which the number of appropriate manifest sex responses is significant, and a single instance only where the total of inappropriate sex responses is significantly greater than the number of predicted responses. Similarly, on MF, the appropriate gender was associated to 12 of the Rorschach areas significantly more often than the total of inappropriate responses; and on MI, the predicted manifest re-

TABLE II—Agreement of Rorschach Responses With Designated Identity of Stimulus Areas

	Free Association						MF Association			MI Association		
	Sex Responses			Symbol Responses								
Area	A*	D**	p	A	D	p	A	D	p	A	D	p
1	28	2	.01	26	14	.05	51	19	.01	53	17	.01
2	2	11	.01	8	45	.01	36	34	N.S.	17	52	.01
3	14	2	.01	37	13	.01	47	23	.01	42	25	.05
4	8	3	.05	30	26	N.S.	59	10	.01	58	10	.01
5	25	0	.01	34	4	.01	58	6	.01	62	1	.01
6	26	0	.01	4	30	.01	50	17	.01	49	10	.01
7	5	10	N.S.	20	29	N.S.	35	35	N.S.	28	32	N.S.
8	18	3	.01	21	23	N.S.	55	15	.01	52	12	.01
9	25	0	.01	37	6	.01	62	7	.01	67	1	.01
10	5	6	N.S.	22	25	N.S.	30	37	N.S.	31	33	N.S.
11	26	14	.05	5	12	N.S.	45	24	.01	44	23	.01
12	23	7	.01	10	22	.01	58	12	.01	50	17	.01
13	17	8	.05	14	23	N.S.	54	14	.01	42	23	.05
14	16	9	N.S.	4	25	.01	52	14	.01	46	21	.01
15	4	3	N.S.	40	21	.05	59	10	.01	53	8	.01
Total	242	78	.01	312	318	N.S.	751	277	.01	694	285	.01

*Agreement
**Disagreement

sponses are significant on 13 areas.

So far as the symbolic responses on FA are concerned, however, there are only 5 areas where the expected symbolic response significantly outnumbers all other responses, and in 4 instances, the total of inappropriate symbolic responses is significantly greater than the number of predicted responses. In order to evaluate more fully symbolic responses, a secondary analysis was run in which the frequency of predicted responses was tested against chance expectancy for those items where the predicted response had not outnumbered inappropriate responses. In other words, these analyses show whether the number of appropriate symbols was in itself significantly greater than chance even in those cases where the total of all inappropriate responses was significant, or where neither appropriate nor inappropriate responses were in significant majority. The results are that out of 10 such areas on FA, 5 show a better-than-chance frequency for the predicted response[2], and under this less stringent test the response total across all areas on FA also shows significant agreement with the designated identity of the Rorschach stimuli.

In sum, on all Rorschach procedures, patients and normals gave responses which are consistent with the designated identity of the Rorschach areas more often than chance. At the same time, it is clear that the symbolic responses on FA show considerably less agreement with the designated stimulus-meaning of the blots than do the spontaneous sex responses on FA or the controlled associations of MF and MI.

The significance of manifest sex responses

The larger number of manifest sex responses evoked from both patients and normals under the conditions of the study also permits focused consideration of the clinical and dynamic significance of such responses. The fact that the normals also gave a considerable number of such responses suggests that not all frank sex imagery follows a breakdown of fundamental defenses, but that there is much preconscious suppression of sexual material on the standard Rorschach as Hallowell (11) has contended. It seems likely that the main effect of this experimental procedure was to remove the typical resistance of unconscious perceptual avoidance of sexual areas. Here Ss were directly confronted with sexual stimuli which they could resist only by saying, "I don't know what *that is.*" It is also likely that the experimenter's specific focus on sexual areas may have signified unconsciously to many Ss that they had permission to respond with frank sexual percepts.

On a standard Rorschach, non-psychotic, non-homosexual patients generally retain sufficient control to suppress frank sex imagery to the point where they are indistinguishable from clinically normal individuals. The present study also shows, however, that under conditions which facilitate manifest sex responses, such patients also give a significantly greater number of sex responses than normals. Table III shows a highly significant difference between the mean numbers of 6.54 sex responses for the patients and 2.60 for the normals ($t=6.13$, $p=.01$). The difference between groups is significant on 9 of the 15 Rorschach areas, and the results for all remaining areas are also in the predicted direction.

Clinically, this greater number of sex responses may reflect a partial breakdown of defenses which permits primary-process imagery near consciousness. This thinking does not break through on a standard Rorschach because the extent of decompensation among such patients is not so great as among psychotics, but the increased permeability of their defenses is then revealed under conditions which facilitate primary-process

---

[2] Areas 4, 7, 8, 10, 13.

TABLE III—Differences Between Patients and Normals in Proportions of Manifest Sex Responses on Free Association

Responses on Free Association

Area	Patients		Normals		Chi-Square	P
	Sex*	Sym**	Sex	Sym		
1	22	13	8	27	11.43	.01
2	9	24	4	29	2.95	.10
3	13	20	3	30	8.25	.01
4	7	25	4	31		N.S.
5	17	15	8	23	4.90	.05
6	19	10	7	24	11.24	.01
7	9	23	6	26		N.S.
8	14	19	7	25	3.14	.10
9	19	16	6	27	9.52	.01
10	8	17	3	30	3.48	.10
11	26	2	14	15	13.52	.01
12	22	10	8	22	10.98	.01
13	19	12	6	25	11.32	.01
14	19	8	6	21	12.58	.01
15	6	27	1	34	2.81	.10

* Manifest sex response
** Symbolic responses

imagery such as the modified Rorschach of this study. The fact that these patients have broken down to the point of requiring hospital care rather than out-patient treatment would appear to support this interpretation.

To consider a piling-up of manifest sex responses as representing a breakthrough of primary-process thinking does not, in any case, deny the dynamic meaning of such responses as revealing a concern about one's sexual identity. Just as the normals feel freer under the conditions of this study to give frank sex responses that are ordinarily suppressed, so too the patients reveal the greater extent of their concern over sexuality.

Still other data collected in the larger study (6) on which this report is based suggest that sex responses are typical of those patients who are most concerned about masking their underlying passivity. These data consist of behavior ratings of masculinity-femininity for the patient group prepared independently by the ward psychiatrists and psychologists using the method of paired comparisons. For each pair of patients, the rater was asked to choose which was the more overcompensating in his behavior, and it was presumed that those patients who achieved high scores tend to be reactively masculine in their everyday behaviors, while those who achieved low scores tend to be effeminate. The raters were instructed to minimize dynamic considerations and to evaluate only the overt behaviors of the veteran according to the following definitions:

Reactive masculinity refers to overcompensating behaviors; for example, to swaggering, bragging, aggressiveness, loud actions and speech, exhibitionistic displays or accounts of masculine feats and exploits.

Femininity refers to passive-dependent behaviors; for example, to shyness, timidity, overpoliteness, concern with consmetic appearance, effeminate characteristics of speech, dress, and action.

Altogether, out of 35 patients, the behavior ratings yielded one group of 16 patients categorized as reactively masculine, and one group of 12 patients categorized as typically feminine in their behavior. Table IV shows that those patients who gave the most manifest sex responses on the Rorschach tended to be rated reactively masculine in their behavior, while those who gave the least number of sex responses tended to be rated feminine. Interpretively, these data sug-

TABLE IV—Number of Manifest Sex Responses as a Correlate of Behavior Ratings of Masculinity-Femininity for Patients

Variable	Behavior Ratings Masculine	Behavior Ratings Feminine	Chi-Square	p
Sex Responses				
High*	12	2		
Low	4	10	9.33	.01

* Number of Ss scoring above median

gest that it is the reactively masculine male who tries to ward off the threat of passivity by a promiscuous exhibition of sexuality (13).

Individual content analyses

In addition to systematic analyses of the significance of predicted responses to each of the Rorschach areas, fuller content analyses for each area were pursued in order to probe more comprehensively the symbolic stimulus-pull of the various locations. The selected observations that follow are seen as the more significant results that emerged from these further content analyses.

Area 1. Card I: Dd 22. This area was designated by Pascal as both vagina and breast. Together, the predicted vagina and breast responses occur significantly more often than the total of all inappropriate responses on all Rorschach procedures. The results of this study show, however, that this stimulus is seen most often as breast. Out of 30 manifest sex responses to this stimulus on FA, for example, there were 24 breast responses and only 4 vaginal responses. Following through, if the other analyses of significance in Table III were limited to breast responses alone, the results would show better-than-chance frequency on FA symbolic responses, and significance over the total of all other responses on MI. The number of feminine associations on MF remains the same, of course, and is also significant over the total of all other associations.

Area 2. Card I: D 3. On this area, the total number of inappropriate responses is significantly greater than the number of vaginal responses on FA for both sex responses and symbolic responses, and again on MI. Even on MF, this stimulus does not draw a significant number of feminine associations. Instead of the predicted vaginal responses, the data show that anal percepts are given significantly more often than chance on FA symbolic responses (p .01) and on MI (p .05), and also that phallic symbols are significant over chance on FA symbolic responses (p .05). Similarly, almost all of the spontaneous sex responses on FA were anal or phallic.

In view of the frequent interpretive emphasis placed on rear-end responses to this area in clinical practice, it is interesting that on FA the patients give a significantly greater number of anal symbols than the normals ($X^2=$ 3.96, p .05). It would seem, however, that anal responses are also sufficiently frequent among the normals to belie their usefulness as a predictor of clinical pathology, but it should be clear that these data do not also dispute the dynamic interpretation of such responses as significant of latent homosexual difficulties.

The significance of phallic responses to this stimulus is unexpected, but it is possible that these responses reflect the way in which the stimulus was outlined as separate from the larger human figure, D 3, which in the standard presentation of this blot largely submerges the phallic quality of the lower area.

As a further clarification of the area's stimulus-meaning, FA responses were also scored in terms of the sex attributed to the human figure. Among the patients, 8 identified a female, 2 a male, and 14 left the sex indeterminate. Among the normals, there were 8 female and 4 male identifications, and only 3 indeterminate responses.

Area 5. Card III: Dd 26. In this case, the predicted phallic response occurs significantly more often than the total of all other responses on all Rorschach procedures. A more clinical analysis of the response protocols suggests, however, that many Ss were upset by this stimulus although they were able to identify it as phallic. For some, this difficulty seemed to derive from the fact that they saw the larger human figure of which this area is a part as a female. The implication was that the juxtaposition of a phallus and a breast on the same human figure was anxiety-provoking for them. A few Ss were able to verbalize their feeling of inconsistency and still respond to both stimuli appropriately, e.g., "The whole body I've distinguished before as a human, but the upper part is a woman and the lower part is of a man, and the area you pointed out is a penis."

More disturbing to many Ss was the size of this stimulus which psychoanalytically may be seen as provoking underlying anxieties about having too small a penis. A good many made some such remark as, "Just that little part right in there? Well, not much there to look at." In addition, this anxiety is reflected in the frequency of associations to a *broken* limb of a tree. Interestingly enough, the data suggest that the normals reacted more sensitively than the patients, or at the least that they expressed their anxiety more readily, for out of 13 such responses, 10 were from normals, and out of 10 comments on the size of the stimulus, 7 were from normals.

Area 6. Card III: Dd 27. The predicted breast responses occur significantly more often than the total of inappropriate responses on FA for sex responses, on MF, and on MI, but, curiously enough, the number of breast symbols on FA is significantly outnumbered by all other symbols and does not even occur with better-than-chance frequency. Instead, phallic symbols are significant over chance on FA (p .01). On further consideration, it would seem that this result reflects the scoring system's failure to distinguish adequately between phallic symbols and phallic-like breast symbols. Psychoanalytic research has shown that the dynamic confusion of breast and penis is common and of important psychological consequences, and it is suggestive that so many Ss chose phallic-like representations of the breast in response to this stimulus rather than symbols which have the roundedness of the breast as a referent. The fact that breast symbols occur with better-than-chance frequency on Area 1 suggests that it is not the failure of the scoring system to differentiate all breast responses, but rather that this area typically evoked phallic-like breast representations. The reason for this may lie in the proximity of this stimulus to Area 5 and the anxiety this juxtaposition evokes.

Area 7. Card III: D 7. It is noteworthy that this stimulus evoked the largest number of mixed-gender responses on all Rorschach procedures. In addition, analysis of the consistency of responses from one Rorschach procedure to the next revealed that responses to this area showed a high degree of inconsistency for both patients and normals. The reason for this seems to be that this area contains within it several obvious subdivisions and there is wide latitude for the focusing of perceptions on any of a number of segments of the total area.

Area 9. Card VI: D 2. There are no further analyses to report here, but this being the most famous of all phallic symbols as it were, it seems appropriate to remark on the considerable consistency with which this area is identified as phallic on all Rorschach procedures.

Area 12. Card VII: D 6. The most famous of Rorschach vaginal symbols does not show the same consistency. Vaginal responses are significant over the total of all other responses on FA sex responses, on MF, and on MI, but on FA symbolic responses there is instead a better-than-chance frequency of phallic symbols (p .05) whose focus is the inner Dd 26. Inspection of the data also shows a relatively large number of mixed-gender responses on MF and a substantial number of anal responses on MI.

It is instructive to note that virtually all of the phallic areas in this study find the predicted response significant over the total of inappropriate responses on all Rorschach procedures, but the results are largely reversed for the vaginal symbols. On FA symbolic responses, in particular, not one of the vaginal stimuli shows the predicted response significant over the total of other responses[3], and three areas do not even show a better-than-chance frequency of the predicted response. This is probably due to the fact that phallic symbols are structurally better defined than vaginal symbols and therefore leave less room for individual differences in perception. From a psychoanalytic point of view, it may be speculated that these results reflect the extent to which the vagina triggers castration anxiety in men and, therefore, derivative perceptual distortions.

In this connection, it was striking how many of the men in this study were ignorant of the conventional term for the vaginal opening which was designated everything from "uterus" to "ureter" to "ovaries." At the least, the number of mispronunciations of the word "vagina" was testimony to considerable conflict and repression.

Not unrelated is the observation that so many Ss fell into the pattern of using such redundant expressions as "the penis of a man" or "the vagina of a woman." One S caught himself and remarked insightfully, "I wonder what other kind there is!" Still another S slipped inadvertently into revealing the underlying unconscious problem expressed in these redundancies when he responded to a vaginal stimulus on MI as follows: "Hair around a fellow's dick, I mean a female's dick (laugh), I mean a female's box (laugh)!"

DISCUSSION

Do the results of this study validate the assumed sexual identity attributed to the various Rorschach locations? This study provides several lines of converging evidence on the question.

If the test of validity is stated operationally as the extent to which the gender of the stimuli is identified appropriately when Ss are asked to associate masculine or feminine, then validity is defined operationally as the extent to which a stimulus is identified as the appropriate sexual organ when Ss are asked directly for manifest sexual identifications, then the answer is again affirmative. On both these tests, the predicted response was shown to be more frequent than the total of all other responses on almost all fifteen of the Rorschach areas. At a simple empirical level, these results show that the Rorschach areas under study do have consistent sexual stimulus-meanings. This means that clinicians are correct in assuming a normative sexual identity for these stimuli. Even more persuasive is the fact that these stimuli are spontaneously identified as sexual parts of the body so readily on the initial presentation of the blots and that the number of appropriate sex responses is significant on ten areas. Altogether, it would seem that these results support the likelihood that many symbolic responses to these same areas may have as their focus an unconscious perception of the stimulus as representative of a sexual organ. The readiness of these responses is not proof, however, as will be seen very shortly.

If the test of validity is stated operationally as the frequency with which free-association symbolic responses are consistent with the designated identity of the Rorschach stimuli, then the result is again affirmative. On this test, the predicted symbolic response did not occur with greater frequency than the total of all other symbols, but better-than-chance frequency was demonstrated for the majority of stimuli and for the total across all areas. This correspondence between symbolic responses and the designated identity of the Rorschach areas is also suggestive evidence that symbolic responses may be generated from an unconscious perception of the sexual organ, but again it is by no means proof. The fact that an area which is designated as a penis, for example, in perceived as an elongated object need be no more than a statement of the structural correspondence between two appropriate associations to a single area. Similarly, the fact that the same stimulus is seen by the same S as a penis either before or after the percept of an elongated object does not demonstrate decisively that it was the perception of the stimulus as a penis that generated the symbolic response. The fact is that psychoanalytically oriented clinicians also interpret symbolic responses which are not consistent with the designated identity of a stimulus as deriving from an unconscious perception of the sexual structure assumed in the first place. To illustrate, a frequent example is the interpretation of the rear-end response as a defense against conscious recognition of the vagina which is considered to be perceived unconsciously.

---

[3] Although Area 1 was designated as both vagina and breast, the data justify its being considered only a breast area as was pointed out before.

The present study supports the possibility that perceptions of manifest sex organs may underly symbolic responses to Rorschach "sex populars" by demonstrating that the Rorschach areas have consistent sexual stimulus-meanings which are readily identified by both patients and normals, and that they tend to evoke symbolic responses which are consistent with their designated identity. In the final analysis, however, it is inconceivable that one can ever demonstrate definitively that a symbolic response "derives" from perception of the manifest sexual identity of a Rorschach stimulus, since there is no way of demonstrating a necessary relationship between the two even when one follows the other closely. The Rorschach blots, after all, are not pictures of the actual sex organs, and when a Rorschach stimulus is presumed to show some degree of stimulus generalization from the actual penis, say, it must necessarily bear the same relationship to various other objects on the same generalization continuum, e.g., an actual tree. Who is to say, then, that a tree response does not derive from perception of a tree alone without unconscious association to a penis? Even when pictures of actual sex organs are used as stimuli, in fact, the assertion of a relationship between the stimulus and symbolic response still requires an intervening assumption (1). These stimuli have to be presented tachistoscopically in order to elicit symbolic responses rather than manifest identifications, so that generalization from the results requires the assumption that perceptual distortions that occur below the threshold for conscious recognition are symbolic representations of the stimulus which is being perceived subliminally.

This means that the theory of sexual symbolism has heuristic meaning for Rorschach interpretation and can thus be "tested" only in terms of validating derivative predictions. Ultimately, it would seem, the crucial demonstration of the meaningfulness of sexual symbolism must come from the study of the individual. At the least, it is research which focuses on the meaning of projective-test responses for the individual that is most relevant to the clinician in his daily labors. Freud (4) himself emphasized the point where normative research ends and understanding of the individual becomes crucial in his discussion of dream interpretation. He argued that normative interpretations of symbols must be used by the analyst only as a supplement to the associations of the dreamer which, practically as well as theoretically, must always take precedence.

SUMMARY

The purpose of this study was to

gather normative data on fifteen Rorschach areas designated by previous research as "sex populars" for males.

The Rorschach cards were shown three times. First Ss were asked to free associate to each area. Responses on this procedure were then classified either as manifest sex responses or symbolic responses, and the symbolic responses in turn were scored as to which sexual organ they represented according to the psychoanalytic classification of symbols. In the second presentation, the Ss were asked whether an area appeared to be more masculine or more feminine. In the final presentation, Ss were asked to identify each area as a sexual part of the body.

The Ss included 35 non-psychotic, non-homosexual male psychiatric patients undergoing treatment at a V.A. hospital, and a control group of 35 normal males equated in age, education, and veteran status with the patients.

The major result of this study is to confirm that the Rorschach "sex populars" have consistent sexual stimulus-meanings which are readily identified by both patients and normals in manifest imagery and which also tend to evoke symbolic responses which are consistent with their respective designated sexual identities.

In addition, the present study supplements previous evidence of the clinical significance of manifest sex responses by demonstrating that under conditions which facilitate such responses, non-psychotic, non-homosexual patients also give a significantly greater number of sex responses than normals. It was further determined that those patients who gave the most manifest sex responses tended to be over-compensatingly masculine in their everyday behaviors, while those who gave the least number of sex responses tended more to be effeminate. The suggestion is offered that manifest sex responses represent dynamically a defensive denial of underlying passivity above and beyond their diagnostic significance as more frequent in individuals suffering emotional disorders of clinical proportions.

Further content analyses of the responses to selected Rorschach areas are presented, and the relevance of these results to the theory of sexual symbolism in Rorschach interpretation is discussed.

REFERENCES

1. Arey, L. B. A tachistoscopic study of levels in symbolism. Unpublished doctoral dissertation, Univer. Chicago, 1952.

2. Beck, S. J., Rabin, A. I., Thieson, W. G., Molish, H., & Thetford, W. N. The normal personality as projected in the Rorschach test. *J. Psychol.*, 1950, *30*, 241-298.

3. Beck, S. *The six schizophrenias: reaction patterns in children and adults.* New York: Res. Monog. No. 6, Amer. Orthopsychiat. Assoc., 1954.

4. Bergmann, M. S. Homosexuality in the Rorschach test. *Bull. Menning. Clin.*, 1945, *9*, 78-83.

5. Chapman, A. H., & Reese, D. G. Homosexual signs in Rorschachs of early schizophrenics. *J. clin. Psychol.*, 1953, *9*, 30-32.

6. Charny, I. W. Rorschach areas designated as "sex populars." Unpublished doctoral dissertation, Univer. Rochester, 1957.

7. Davids, A., Joelson, M., & McArthur, C. Rorschach and TAT indices of homosexuality in overt homosexuals, neurotics, and normal males. *J. abnorm. soc. Psychol.*, 1956, *53*, 161-172.

8. Due, F. O., & Wright, M. E. The use of content analysis in Rorschach interpretations: differential characteristics of male homosexuals. *Rorschach Res. Exch.*, 1945, *9*, 169-177.

9. Fein, Leah Gold. Rorschach signs of homosexuality in male college students. *J. clin. Psychol.*, 1950, *6*, 248-253.

10. Freud, S. *The interpretation of dreams.* New York: Basic Books, 1955.

11. Hallowell, A. I. The Rorschach technique in personality and culture studies. In Klopfer, B. (Ed.) *Developments in the Rorschach technique.* Vol. 2. *Fields of application.* Yonkers, N.Y.: World, 1956, pp. 458-544.

12. Jones, A. Sexual symbolism and the variables of sex and personality integration. *J. abnorm. soc. Psychol.*, 1956, *53*, 187-190.

13. Klopfer, W. G. Interpretative hypotheses deriving from the analysis of content. In Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., & Holt, R. R. *Developments in the Rorschach technique.* Vol. 1. *Technique and theory.* Yonkers, N.Y.: World, 1954. Pp. 376-402.

14. Knopf, I. J. Rorschach summary scores in a differential diagnosis. *J. consult. Psychol.*, 1956, *20*, 99-104.

15. Pascal, G. R., Ruesch, H. A., Devince, C. A., & Suttell, B. J. The study of genital symbols on the Rorschach. *J. abnorm. soc.*

Psychol., 1950, *45*, 286-295.

16. Shaw, B. "Sex populars" in the Rorschach test. *J. abnorm. soc. Psychol.*, 1948, *43*, 466-470.

17. Weider, A., Wolff, H. G., Brodman, K., Mittleman, B., & Wechsler, D. *Cornell Index.* New York: Psychological Corp., 1948.

18. Wheeler, W. M. An analysis of Rorschach indices of male homosexuality. *Rorschach Res. Exch.*, 1949, *13*, 97-126.

Received March 28, 1958

Revision received September 29, 1958

The Szondi Test and the Prediction of Antisocial Behavior

WALTER M. COULTER[1]
University of Portland

PROBLEM

The present study is an attempt to meet Deri's criticisms of previous experiments with the Szondi Test (4). A brief review of these studies and Deri's rebuttal provide the theoretical basis of the present study.

Several studies of the Szondi Test have established that the stimulus pictures are not selected on a chance basis (5, 8, 9, 10). It has also been found that deviations from chance selection are no more significant with the Szondi pictures than with non-clinical pictures (9). The crucial question is whether the Szondi pictures are being selected on the basis of the needs designated by Szondi or on the basis of other needs and stereotypes accounting for the selection of non-clinical pictures.

Various studies have failed to demonstrate internal consistency in the Szondi Test and have shown rather the presence of strong likes and dislikes within the sets assumed to depict the same Szondi need (8, 11, 12, 14). This is consistent with the results of association and matching experiments which fail to support the hypothesis of picture selection on the Szondi need system (5, 10). Rather it seems that positive choices are correlated with the pictures judged to show friendliness, sociability and competence, in contrast to those judged as depicting withdrawal, anxiety and suspiciousness (12). Empirical studies attempting to differentiate various diagnostic groups from normals on the basis of Szondi signs have largely resulted in negative findings (1, 6, 7, 13).

Deri has criticized these approaches in a recent article (4). In answer to the studies criticizing internal consistency, she points out that they are based on the erroneous assumption of equipotentiality of need within each set. Tests of internal consistency are not applicable, she maintains, because of variations in the strength of each designated need.

Deri objects to the method of verbal matching and association, arguing that this method fails to elicit the more significant unconscious meaning of test factors. Finally, negative findings in attempts to differentiate diagnostic groups are explained by Deri as largely due to the use of incomplete and erroneous signs taken out of the context of her rationale (2).

Since it is difficult, if not impossible, to meet Deri's objections that tests of internal consistency cannot be applied, and that verbal association and matching experiments fail to elicit sufficient unconscious meaning, the present study will attempt merely to distinguish diagnostic groups by using the more complete signs recommended by Deri (2). This is also a more useful procedure because clinicians are primarily concerned with the practical utility of a test in distinguishing various diagnostic categories.

METHOD

The present study is a further analysis of data obtained by Scott (13). Scott attempted to differentiate a group of 600 delinquents from a control group of 600 high school adolescents. The groups were matched in age and sex. The delinquent group was composed of adolescents who had police records, were formally convicted and were detained in a juvenile home. The control group adolescents had no previous police records nor any other evidence of antisocial behavior. Scott (13) compared the two groups on the basis of Deri's individual factor signs and failed to significantly differentiate them. His results, however, were not wholly conclusive, since he did not include the signs regarded by Deri as the most significant predictors of antisocial behavior (2, 3). The present study will employ these more complete antisocial signs of Deri in an effort to test her specific and strongly stated hypotheses on the basis of these signs.

---

[1] This study was submitted in partial fulfillment of the requirements for the M.S. degree, under the direction of Rev. William A. Botzum, C.S.C., Ph.D., University of Portland.

To test these more complete signs (composed of both factors of each of the four needs represented in the test), Scott's data on individual factors were re-evaluated in terms of the 64 possible diagnostic signs of the test. Thirteen of these signs are proposed for differentiating antisocials from normals. An additional antisocial sign was constructed through the combination of the most significant of the 13 signs into a profile configurational sign. According to Deri's rationale (2) these 14 signs should significantly differentiate an antisocial group from a normal control group. As they comprise the most confident predictions Deri makes in regard to a diagnostic group, it follows that failure of these signs to differentiate an antisocial group will question the usage of any sign approach based on her rationale (2).

The 14 indicators and counter-indicators of antisocial behavior are as follows:

Indicators of Antisocial Behavior

1. *Plus or Open S, Plus H, Minus E and Minus M.* This is the most complete sign of antisocial behavior compiled from several test factors. It implies antisocial behavior and is commonly found among criminals (2, pp. 69-81).

2. *Plus H and Plus S.* Common among criminals (2, p. 81).

3. *Plus H and Open S.* Characteristic of antisocials (2, p. 79).

4. *Minus H and Plus S.* Obtained by those who identify with physically active or aggressive behavior (2, p. 85).

5. *Minus E and Plus Hy.* This sign indicates an individual little concerned with the way his actions affect others and is most often found in antisocials. Deri claims that this is the most significant predictive sign of the whole test (2, p. 111).

6. *Minus E and Minus Hy.* This sign occurs often in many kinds of delinquencies characteristic of children found in the juvenile courts (2, p. 114).

7. *Open E and Open Hy.* This sign appears twice as frequently among criminals than among the average population (2, p. 117).

8. *Plus D and Minus M.* This indicates frequent aggression associated with antisocial behavior (2, pp. 149-150).

9. *Open D and Minus M.* This sign is characteristic of individuals who have the most negativistic attitude toward society and are the least socially adjusted (2, pp. 155-158).

Counter-Indicators of Antisocial Behavior

10. *Minus H and Minus S.* The possibility of overt psychoses or antisocial acts is practically ruled out by this one sign. It implies a humanistic and socially positive attitude of the subject regardless of the other signs of the test (2, p. 83).

11. *Plus H and Minus S.* A socially positive sign of a basically dependent and submissive individual who rejects the need for uninhibited motor discharge or aggressive manipulation of concrete objects (2, p. 84).

12. *Plus E and Minus Hy.* The most definite sign against any form of antisocial behavior. Given by religious and ethical people with a strong super-ego who are concerned with problems of general social welfare (2, p. 109).

13. *Minus D and Plus M.* This sign always implies a non-aggressive person who sublimates his aggressive needs into idealistic pursuits characteristic of socially positive attitudes and satis-

TABLE I—Test of Significance of Differences Between Delinquents and Controls on 14 Szondi Antisocial Diagnostic Signs*

Signs	*Delinquent*	*Controls*	*Both*	x^2
$\overset{+}{o}$S, −E, −M, +H	19	20	39	0.00
+H, +S	171	136	307	3.98**
+H, oS	32	24	56	.86
−H, +S	14	20	34	.72
−H, −S	27	21	48	.52
+H, −S	122	140	262	1.22
−E, +Hy	14	18	32	.28
+E, −Hy	130	155	285	2.18
−E, −Hy	68	66	134	.02
oE, oHy	2	12	14	5.78***
−D, +M	90	98	188	.34
+D, −M	34	38	72	.22
oD, +M	77	92	169	1.32
oD, −M	70	65	135	.18
Total	870	905	1175	
x^2			19.61	
df			13	
P			.10	

* Tabled frequencies represent the number of delinquents or controls (of the total group of 600 delinquents and 600 controls) obtaining the particular antisocial diagnostic sign.

** Significant beyond .05 level

*** Significant beyond .02 level

factory ethical control. Practically never found in criminals (2, p. 156).

14. *Open D and Plus M*. This sign is characteristic of well-functioning and fairly happy individuals who have a general positive attitude to society and feel themselves a part of a closely knit group (2, p. 156).

RESULTS

A chi square test was made of these signs in an effort to distinguish the 600 delinquents from the 600 controls. Since it was necessary to re-score Scott's data in terms of the 64 possible diagnostic signs before abstracting the 14 antisocial signs, an opportunity was provided to see further whether all 64 diagnostic signs as a group could differentiate the delinquents from the controls.

Table I presents the chi square tests of the 14 signs which should significantly differentiate the groups according to the Szondi rationale. The overall chi square test of these 14 signs indicates that they are significant at the .10 level of confidence. Failure to attain the .05 level of confidence, however, indicates that we cannot rely on these signs as a group to distinguish an antisocial group from a normal group. The chi square test of each of the 14 signs resulted in only two being significant. The Plus H and Plus S sign significantly differentiated the antisocials from the controls at the .05 level of confidence. This supports the Szondi hypothesis as it was obtained by a significantly greater number of antisocial subjects. The Open E and Open Hy sign was significant at the .02 level of confidence. But this was contrary to the Szondi hypothesis since it was obtained by a significantly greater number of control subjects.

Table II gives the observed frequencies of the 64 diagnostic signs as obtained by the delinquent and control groups, as well as the chi square test of the difference between the groups on the basis of the combined signs. The obtained chi square value for the 64 diagnostic signs as a group is significant at the .02 level of confidence. Only 13 of these signs were claimed to be indicators or counter-indicators of antisocial behavior according to the Deri rationale (2). As these signs were not significant, the significance of the 64 signs as a group suggests that the delinquent and nor-

TABLE II—Test of Significance of Differences Between Delinquents and Controls on 64 Szondi Diagnostic Signs

Sexual Vector

Sign	*Delin.*	*Cont.*	*Both*
H S	N	N	N
+ +	171	136	307
+ —	122	140	262
— +	14	20	34
— —	27	21	48
o +	18	22	40
o —	36	38	74
— o	5	7	12
+ o	32	24	56
o o	9	9	18
a +	19	23	42
a —	14	20	34
a o	4	13	17
a a	15	14	29
+ a	89	76	165
— a	14	14	28
o a	18	25	43

Paroxysmal Vector

Sign	*Delin.*	*Cont.*	*Both*
E Hy	N	N	N
+ +	16	8	24
+ —	130	155	285
— +	14	18	32
— —	68	66	134
o +	16	7	23
o —	90	103	193
— o	30	34	64
+ o	27	26	53
o o	2	12	14
a +	11	11	22
a —	59	67	126
a o	21	9	30
a a	7	10	17
+ a	28	22	50
— a	29	19	48
o a	33	35	68

Ego Vector

Sign	*Delin.*	*Cont.*	*Both*
K P	N	N	N
+ +	25	17	42
+ —	26	21	47
— +	112	121	233
— —	77	49	126
o +	44	55	99
o —	35	29	64
— o	96	109	205
+ o	18	22	40
o o	26	36	62
a +	23	31	54
a —	32	19	51
a o	24	28	52
a a	7	10	17
+ a	4	7	11
— a	35	22	57
o a	14	19	33

Contact Vector

Sign	*Delin.*	*Cont.*	*Both*
D M	N	N	N
+ +	30	46	76
+ —	34	38	72
— +	90	98	188
— —	28	40	68
o +	77	92	169
o —	70	65	135
— o	79	45	124
+ o	35	31	66
o o	49	44	93
a +	15	21	36
a —	12	15	27
a o	14	12	26
a a	5	6	11
+ a	16	12	28
— a	16	11	27
o a	28	27	55

TOTALS:	*Delin.*	*Cont.*	*Both*
	2400	2400	4800
x^2			87.08
df			63
p			.02

mal groups are being differentiated on the basis of factors not included in the Szondi rationale.

DISCUSSION

The hypothesis under investigation was that 14 signs related to antisocial behavior should significantly differentiate the antisocial from the control group if the Szondi rationale presented by Deri (2) is valid. This was not substantiated as the overall chi square value failed to attain the required .05 level of significance. But as it reached the .10 level some support could be claimed for the Szondi signs as a group. Only two of the 14 individual signs were found to be significant. One of these supported the Szondi prediction and the other was a significant counter-indicator of the Szondi prediction. Considering that these 14 antisocial signs are the most specific and confident predictions Deri makes concerning a diagnostic group, this result seriously questions the interpretation of the Szondi Test on the basis of Deri's rationale (2).

An additional finding which cannot be accounted for on the basis of the Deri rationale is the differentiation of the delinquents from the controls at the .02 level of significance when employing all 64 diagnostic signs, of which only 13 relate to antisocial behavior.

The strength of this particular study is in meeting Deri's criticism (4) of previous studies which failed to employ the more complete diagnostic signs; and also in testing Deri's most specific and confidently stated hypotheses. Another advantage is the large size of the samples as well as the behavioral (operational) criteria used to define the delinquent and control groups. It must also be recognized that any study of this type is limited by the absence of accepted criteria in defining and differentiating diagnostic groups. It is therefore necessary to assume that "antisocial" is a meaningful and useful diagnostic category and that delinquents adequately represent this group. However, these assumptions follow from Deri's descriptions of the 14 signs tested in this study.

These results are consistent with the almost completely negative findings of other studies (1, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14). The presence of common underlying needs and stereotypes other than the specific needs postulated by Szondi, seem to determine picture selection. While the Szondi Test may be useful to the individual clinician, who through long experience with the test has constructed his own "signs," the use of the test on the basis of the Szondi rationale presented by Deri (2) is of questionable validity.

It is recommended that future research be concerned with a new rationale for the Szondi Test or with the creation of a new set of pictures selected on a different theoretical basis. Such research should prove profitable since this type of projective technique has its place in a diagnostic battery. It is easy to administer, enjoyable to the subject, not very time consuming and provides good face validity.

SUMMARY

This study attempts to meet Deri's criticisms of previous studies on the Szondi Test (4). Delinquent and control groups of 600 subjects each were differentiated on the basis of operational criteria. An attempt was made to distinguish these groups on the basis of 14 significant indicators and counter-indicators of antisocial behavior from Deri's rationale (2). These 14 signs comprised the most specific and confident predictions Deri makes on the basis of the Szondi Test.

The 14 signs as a group were unable to significantly differentiate the delinquent from the control group. Only two of the 14 individual signs were significant in differentiating the groups. One of these supported the Szondi prediction while the other was in the opposite direction. However, the 64 signs comprising Deri's rationale, of which only 13 pertain to antisocial behavior, significantly differentiated the antisocial from the control group at the .02 level.

These results are consistent with the negative findings of other studies which question the validity of the Szondi rationale presented by Deri (2).

REFERENCES

1. David, H., & Rabinowitz, W. Szondi patterns in epileptic and homosexual males. *J. consult. Psychol.*, 1952, *16*, 247-250.

2. Deri, Susan. *Introduction to the Szondi Test*. New York: Grune and Stratton, 1949.

3. Deri, Susan. Differential diagnosis of delinquents with the Szondi Test. *J. proj. Tech.*, 1954, *18*, 33-41.

4. Deri, Susan. The Szondi Test. In Brower, D., & Abt, L. (Eds.), *Progress in clinical psychology*. New York: Grune and Stratton, 1952. 222-233.

5. Dudek, F., and Patterson, H. Relationships among the Szondi Test items. *J. consult. Psychol.*, 1952, *16*, 389-394.

6. Fleishman, M. The discriminative power of Szondi's syndromes. *J. consult. Psychol.*, 1954, *18*, 89-95.

7. Fosberg, I. Four studies with the Szondi Test. *J. consult. Psychol.*, 1951, *15*, 39-44.

8. Guertin, W. A test of a basic assumption of the Szondi. *J. consult. Psychol.*, 1950, *14*, 404-407.

9. Guertin, W. A comparison of the stimulus values of Szondi pictures with those of normal Americans. *J. clin. Psychol.*, 1951, *7*, 163-166.

10. Klopfer, W., and Borstelmann, L. The associative valences of the Szondi pictures. *J. Pers.*, 1950, *19*, 172-188.

11. Lubin, A., and Malloy, M. An empirical test of some of the assumptions underlying the Szondi Test. *J. abnorm. soc. Psychol.*, 1951, *46*, 480-484.

12. Richardson, H. The discriminability of the "drive factors" represented in the Szondi pictures. *J. clin. Psychol.*, 1952, *8*, 384-390.

13. Scott, E. The Szondi Test as a diagnostic instrument in predicting delinquency. Unpublished doctor's dissertation. Univer. of Portland, 1953.

14. Szollosi, E., Lamphier, D., and Best, H. The stimulus values of the Szondi pictures. *J. consult. Psychol.*, 1951, *15*, 419-424.

Received August 14, 1958

Critique of Swensen's "Empirical Evaluations of Human Figure Drawings"

EMANUEL F. HAMMER
New York City

In a recent review (6) of research in the field of figure drawings, several fallacies are expressed which invite correction before other research workers fall into the use of the same misconceptions. In the face of so comprehensive and integrated a review of the literature, criticism of Swensen's article is perhaps supererogatory, but three points of clarification must be made.

Swensen (6) reports that Holzberg and Wexler (4) found no significant difference between normals and schizophrenics in drawing naked feet with the toes delineated, in drawing feet with the toe nails indicated, or in a tendency to begin a drawing on one part of the page and then start some place else on the page, turning the page over, or showing other signs of disorganized sequence. Also, no significant differences were found between normals and schizophrenics in the frequency of drawing internal organs which showed through a transparent body wall. Swensen interprets these findings as contraindicating Machover's hypotheses concerning these signs' suggestion of schizophrenic processes in the subject.

The occurrence of naked feet with toe nails delineated, the occurrence of disorganized and bizarre sequence in the order of the various parts of the human figure drawn, and the representation of internal organs almost invariably, in my experience, are associated with schizophrenia. In view of this experience, I can not help suspecting that the responsibility for the lack of statistical support for these clinical findings lies on the shoulders of the experimental approach rather than on those of the hypotheses: All of these three "schizophrenic signs" are relatively infrequent in projective drawings of the human figure, but where they do occur, they occur in the drawings of schizophrenics. Thus, to test these hypotheses adequately, only instances where the sign does occur should be included. For example, to wait to accumulate twenty such drawings and then compare the incidence of schizophrenia in the subjects who submitted these drawings, would be the only way to assess fairly the validity of the sign. If one had to wait until two hundred drawings were accumulated in order to obtain twenty in which these signs occurred, and then one found that in eighteen of the twenty the subject was actually schizophrenic, this would then constitute an investigation of the meaning of such a sign. However, to investigate a relatively infrequent occurrence by comparing fifty "normals" with fifty schizophrenics and deducing from the respective instance of zero and two frequencies of such signs that there is "no statistically significant difference" between the two groups does violence to the actual clinical use of such signs and to the statistically sophisticated investigation of their meaning.

The second point this writer wishes to make concerns those studies investigating hypotheses which are formulated on a not-too-careful reading of Machover's contribution. Swensen states that Machover reports that the drawing of knee joints suggests a faulty and uncertain sense of body integrity, and occurs chiefly in schizoid and schizophrenic individuals. Swensen then interprets Holzberg and Wexler's (4) finding, that normal women show the knee joint significantly more often than hebephrenic schizophrenic women, as a direct contraindication of Machover's hypothesis.

Actually, a reading of the section of Machover's book in which the meaning of "joints" is discussed (and it is only one paragraph) will find the following sentences: "The schizoid, the frankly schizophrenic individual, and the body narcissist in decline, will lean on joint *emphasis* (italics mine, E.F.H.) in order to stave off feelings of body disorganization," and "Most drawings that involve joint *emphasis* (again my italics) . . . " Thus, the flavor of the hypothesis concerns overemphasis upon detailing of joints in the drawings. The mere inclusion of knee joints in the drawings, without overemphasis, is consistent with the better reality contact and assessment of the normal women as compared with the hebephrenic schizophrenic women, and is not research data opposing the hypothesis as clinically employed.

Elsewhere Swensen points out that "erasures are considered an expression of anxiety" but that Goldwirth (2) found that, in general, normals employed more erasures than other groups. Swensen concludes that, "These results appear to contradict Machover."

This type of research reasoning embodies a popular fallacy in which groups of subjects are compared with other groups of subjects, and extremes in each group tend to cancel each other out, thus yielding a more benign Mean for the group. But clinicians find that neurotic and psychotic groups tend to deviate from the norm in either direction. Thus, sick individuals will draw a figure much too large (at the grandiose side of the continuum) or much too small (reflecting direct feelings of inferiority and inadequacy), they will either draw with too light a line (reflecting anxiety, hesitancy and uncertainty) or too heavy a line (reflecting aggression and inner tension); similarly they will erase too much or not erase at all. As with all areas of behavior, it is the deviation in either direction from the Mean which are clinically noteworthy. Group comparisons, then, on any variable tend to obscure the extreme emphasis, in both directions, of that group and to cancel out the noteworthy occurrences.

In regard to the specific hypothesis about erasures, some erasure, with subsequent improvement, is a sign of adaptiveness and flexibility. Overemphasis upon erasure, particularly in the absence of subsequent improvement in the drawing, is the correlate of excessive self-doubt, self-disapproval, and conflicts which result from perfectionistic demands upon one's self. A total absence of erasures, on the other hand, may denote a lack of adaptive flexibility.

In cases such as this, a comparison of Means has no valid meaning. The only research design that is applicable would involve employing a three-point (or five-point) rating scale: (a) over-emphasis, (b) "normal" emphasis, and (c) under-emphasis and absence. Then the comparison between groups which is appropriate would be in regard to percentages falling in the extreme categories, not with the obscured picture of the Means.

The last point that requires clarification in Swensen's review concerns the basic premise of projective drawings as a reflection of the self. Swensen reports Berman and Laffal's (1) comparison of figure drawings with the body type of the subjects offering the drawings. A Pearson r of .35, significant at the .05 level of confidence, was yielded on the basis of Sheldon's body types. In inspecting Berman and Laffal's data, Swensen points out that "only" eighteen of their 39 subjects drew figures that were judged to be of the same body types as the subject's body type, and concludes that for some subjects, the figure drawn represents the subject's own body, but for the majority of subjects, the figure drawn represents something else.

Swensen deduces, "Since in clinical work the reliable diagnosis of the clinical case is of paramount importance, this lack of consistent evidence supporting Machover, . . . suggests that the DAP is of doubtful value in clinical work."

Here, Swensen is entangled in a relatively unsophisticated notion of the concept of the self. Some subjects tend to project themselves as they experience themselves to be, while other subjects tend to project themselves as they wish to be. The idealized version of the self is an integral component of the self-concept and is necessary in describing personality. It is not the chaff, to the real self as wheat. In actual clinical context, most drawings are neither one nor the other, but actually represent a fusion of both the realistic perceptions of one's self and the ego-ideal. In addition, the picture is further complicated by the fact that the perceptions of one's self *as one fears one might be* also color the total picture. Since the *self* actually includes what we are, what we wish to be, and what we fear we might sink to, we must expect all three to flood projective drawings and not regard any deviation from perfect correlation on any one of these variables between the drawing and the subject as a contraindication of the basic hypothesis.

The trouble with Swensen's interpretation of the results of Berman and Laffal's study is that he too narrowly defines the self as both experienced by the subject and as projected in his drawing. As the present writer points out elsewhere (3), a still additional facet that must be reckoned with in the understanding, and investigation of, projective drawings involves a perception of significant figures in one's early developmental years. Thus, the projective drawing interpreter and/or research worker must grapple with the problem of disentangling the influences of four different projections on the drawing page:

For example, a subject who suffers from "castration anxiety" will reveal *the fear of what he may become*, in his drawing. A subject who feels himself to be obese may draw a fat person *(what he feels himself to be)*; another subject who suffers from obesity but who has not yet lost the capacity to yearn for, and strive for, an ideal figure will draw a very shapely person *(what he wishes to be)*. A child who experiences his father as threatening may, as one subject recently did, draw a male with teeth bared, a dagger in one hand, and scissors in the other, with a generally menacing facial tone and violent look in the eyes *(his perception of others)*.

In the face of a complex world, the research worker is obligated to recognize the complexity of the variables he attempts to come to grips with in his investigations, and steer vigorously away from the dangers of atomistic studies, naively conceived, and dogmatically interpreted.

REFERENCES

1. Berman, S. & Laffal, J. Body type and figure drawing. *J. clin. Psychol.*, 1953, *9*, 368-370.

2. Goldwirth, S. A comparative study of drawings of men and women done by normal, neurotic, schizophrenic and brain-damaged individuals. Unpublished Ph.D. thesis, Univer. of Pittsburgh, 1950.

3. Hammer, E. F. *The clinical application of projective drawings*. Springfield, Ill.: Charles C. Thomas, 1958.

4. Holzberg, J. D. & Wexler, M. The validity of human form drawings as a measure of personality deviation. *J. proj. Tech.*, 1950, *14*, 343-361.

5. Machover, Karen. *Personality projection in the drawing of a human figure*. Springfield, Ill.: Charles C. Thomas, 1949.

6. Swensen, Jr., C. Empirical evaluations of human figure drawings. *Psychol. Bull.*, 1957, *54*, 431-466.

Received July 28, 1958

The Use and Misuse of the Rorschach Method

I. Variations in Rorschach Procedure[1]

MARGUERITE R. HERTZ
Western Reserve University

Since 1921 when Rorschach published his monograph on the Rorschach Method hundreds of books and articles have appeared reporting on its developments, its reliability and validity, its use as an instrument of research, and its application in various areas and for a multitude of purposes. But as the years roll by, more and more of our assumptions are subjected to the cold scrutiny of the research worker, and more and more the validity of the method is challenged.

Twenty years after Rorschach's original contribution, in a critical review of the research which had been done, I wrote

> ". . . results such as these reflect creative research and arduous labor . . . but despite its impressiveness, much remains fragmentary. Many of the results have been challenged and the validity of the method has yet to win complete scientific acceptance" (26, p. 549).

Ten years later, I had occasion to review the field again, and despite unmistakable progress which could be noted,—increased concern with the technical aspects of the method, more appropriate use of statistical devices, increase in normative data, refinement of research methods, identification of variables in the test situation which condition test performance, attempts to establish theoretical foundations and more careful application, I still was compelled to write

> ". . . There is still serious dearth of basic research. Studies are sporadic and uncoordinated. Many Rorschach hypotheses have been challenged. Considerable doubt has been cast upon the validity of many basic Rorschach concepts. Few studies have been replicated. Results of research thus far are tentative and suggestive, but not definite" (28, p. 134).

Now, almost forty years have elapsed since Rorschach's publication, and the same difficulties and conditions prevail in research. It is right and proper that we be challenged. In 1956 in the Annual Review of Psychology, Cronbach wrote

> ". . . it is not demonstrated that the test is precise enough or invariant enough for clinical decisions. The test has repeatedly failed as a predictor of practical criteria . . . there is nothing in the literature to encourage reliance on Rorschach interpretations . . . " (12, p. 184).

In the current Annual Review of Psychology, we again read, this time Arthur Jensen's indictment:

> ". . . in the writer's judgment, the standard projective techniques have been a failure methodologically and substantively in personality research . . . The Rorschach in particular has been worthless as a research instrument. Though claiming for decades to be the method par excellance for studying personality, the Rorschach Method has nothing to show for its applications in the personality field. After more than thirty years of research the vast bulk of Rorschach studies are still attempting to demonstrate some kind of validity of this test . . ." (34, p. 296).

These statements are in strange contrast to the experience which most clinical psychologists have in the field. Those of us who work in the clinic, in the hospital, in the institution, in the school and college, or on the anthropological expedition, feel in the Rorschach we have an instrument which, *under the critical eye of the clinician*, tells us much about the personality structure and the dynamics underlying the behavior of an individual. It tells us much about impulse experience and the defensive and adaptive operations, about the maturity and the social competency of the individual, about the degree and trend of deviation and the extent of integration and disintegration. Indeed we feel that we have an instrument which each day gives us new and challenging insights into human behavior and human relationships.

---

[1] Paper delivered in part at the Midwestern Psychological Association, Detroit, Michigan, May 1, 1958.

It is because of this that some of us are unwilling to share the extreme views of our critics, that the Rorschach Method is invalid because its validity has not yet been established. Rather we prefer to reevaluate not only our method and its basic assumptions, but the procedures we are using and the people who are trying to do the validation. We ask ourselves why in the course of 40 years we have not been able to subject our method to systematic study, identify specific validation objectives, formulate hypotheses, and determine upon research designs which would provide us with the necessary data for demonstrating validity. Where have we gone wrong?

Of course, we may not have gone wrong. It may be that for most purposes, the Rorschach Method *is* invalid. It may be that it reveals dimensions of personality which are too gross and too general to be of any practical use. It may be as Cronbach indicates that it is a "wide-band instrument singling out salient aspects of personality regarding which more data must be obtained" (12, p. 184.).

Again, the method may be so sensitive to temporary influences and disturbances, that it does not give a valid picture of the true personality at all. Or we the interpreters may not know how to differentiate between that which is peripheral and that which is crucially central in the personality. Or the Rorschach may give a distorted picture. We are told for example that because of the meaningless nature of the blot, the subject may feel helpless and threatened in the Rorschach situation and regress to more infantile modes of behavior (Baer (3), Schafer (54)).

The method may not reflect the more adaptive functions or it may be too gross to differentiate between unwholesome defensive operations and those which are more successful (Korner (39)). It may fail to differentiate between the "primary process" in thinking which reflects weakness and regression and that which reflects fluidity, freedom and productivity, what Kris calls "regression in the service of the ego" (Holt (30)). We the interpreters may be limited in recognizing these finer differentations or we may not know how to weigh these factors in our interpretation.

Again, we may be proceeding on certain assumptions which are unwarranted. McFarlane and Tuddenham (42) have enumerated three very important hypotheses which have not yet been explained:

> 1. ". . . a protocol is a sufficiently extensive sampling of the subject's personality to warrant formulating judgments about it."
>
> 2. " . . . the psychological determinants of each and every response are basic and general . . . "
>
> 3. ". . . projective tests tap the durable essence of personality equally in different individuals . . . " (42, p. 34).

Indeed there are many features of the Rorschach method which may be and probably are invalid. These require extensive investigation. We have only just begun.

On the other hand, it may be that as yet we have not developed or refined the Rorschach Method to the degree that it will lend itself to systematic analysis. It may also be that as yet our research approach and methods are inappropriate to demonstrate the validity of a multidimensional tool like the Rorschach. While there can be little doubt that as yet, in our attempts to validate many aspects of the Rorschach method, results have been for the most part negative, it is equally true that in large measure much of the research has been inadequate, the research approach faulty, the emphasis in the wrong direction, and research clinicians inadequately equipped. Therefore a fair statement of the status of the scientific worth of the Rorschach today would be, not that it is an invalid method, but that developments with the method and validating studies to date have not demonstrated its validity.

I would like to consider some of these features which in my judgment could account at least in part for the unsatisfactory results reported in some of our validation studies. First I would like to discuss variations in Rorschach procedure and in the methods of handling Rorschach data, and second, the inadequacy of normative data. In a subsequent paper I would like to consider problems in some of our validating studies.

At this time I would like to develop the thesis that Rorschach clinicians must concentrate on the following procedures in order to place the method on a firm scientific basis,—

1. develop more precise and uniform procedures and agree on adequate objective criteria for the various scoring categories,
2. identify, define, and systematize the qualitative features utilized in the interpretation,
3. agree upon practice and principles of procedure to permit systematic investigation,
4. develop research procedures which can handle the problems of validation of a clinical instrument and the larger problems inherent in the handling of the many faceted aspects of personality,
5. train research clinicians to do the job effectively.

I. VARIATIONS IN RORSCHACH PROCEDURE

When the Rorschach Method is utilized in the clinic, the procedure can be and should be somewhat flexible. Within limits, the clinician adopts the method which he finds most serviceable in the assessment of his individual subject. In his evaluation of the Rorschach performance, the responsible clinician takes into consideration the kind of procedure he has utilized, his specialized manner of handling the Rorschach data, and the variables which in his judgment have entered into the total testing situation.

Even in the individual clinical situation, however, too wide a latitude of operation on the part of the Rorschach clinician and too many idiosyncratic procedures encourage an undisciplined kind of subjectivity, arbitrariness, and guessing which lead to innumerable sources of error. In addition, such personalized procedures create confusion when clinicians try to review or utilize the Rorschach data of another clinician. Even in the clinic, then, some measure of discipline must be exercised lest the Rorschach Method become a series of diverse Rorschach methods which defy systematic study and analysis.

While there may be some disagreement as to the extent to which the Rorschach procedure should be standardized in the clinic, there should be little doubt that a more uniform and disciplined procedure is imperative for research purposes. While there has been considerable progress in the objectification and standardization of the administration and scoring of the method and in the clarification of various aspects of the interpretation since 1921, there are today enough variations in the procedure and in the integration of Rorschach data to prevent systematic and controlled treatment of the data for research purposes. Here of course, the fault lies within our own ranks.

First we should note that few texts in the Rorschach Method are adequate for training. In the last few decades several "texts" have appeared. Many of them are valuable in that they describe and make public personalized procedures, principles and practices, and to this extent they enable others to experiment with them, evaluate them and adopt what is acceptable. There is serious failure however, in most of the books to emphasize research and to differentiate between what we know as a matter of validation and what has not yet been proven.

Sarason's book (53) is the exception. It is outstanding in its attempt to incorporate research in its presentation. Other books however display little effort to relate their material to actual research. The text by Klopfer et al. (37) contains chapters on validating studies and on crucial theoretical and practical problems but the presentation of the procedure, scoring and interpretation are not influenced by them. One must view with alarm the mathematical precision with which many scoring formulae are introduced with their respective interpretations without any validating evidence to support them. It makes little difference that interpretations are called "hypotheses." Students take them and utilize them with similar mathematical precision.

Phillips and Smith (46) include some valuable research results to support some of their interpretations. For the most part, however, their procedures are highly personalized and arbitrary, and they frankly admit that their interpretations are based on "guessed-at-laws." (46, p. v) Beck's books (6-8) adhere rather closely to orthodox Rorschach procedure and are invaluable for their penetrating analysis of cases. There are however few references to research findings. The current book by Piotrowski (48) is par excellence an exposition of his personal views, beliefs, and procedures. Despite the fact he states as one of his goals, "to contribute to the process of tidying up and tightening perceptanalysis as a scientific procedure," there is little evidence to indicate why he considers his procedure "scientific."

For the most part, the books published have presented personalized procedures and methods of handling Rorschach data in systematized fashion and have offered challenging hypotheses for further exploration and research. To the extent that they fail to incorporate research findings and issues of validity in their presentation, however, to that extent they do not contribute to the scientific status of the Rorschach Method.

Today, many Rorschach examiners fail to work within a theoretical framework and make their theory explicit. No clinical tool can be used well without some guiding theoretical orientation. More and more of us are learning that our procedure, our scoring system, the interpretations and inferences we make from our data depend in large measure on some general conceptual framework of personality. Fortunately we note a marked trend toward the systematic application of theoretical concepts in Rorschach testing today. Failure to make our theoretical position explicit however has created considerable confusion in our ranks, in the understanding of our inferences, in our communications, in the formulation of research problems and in the research itself.

Turning to procedure, in the last two decades variations have appeared in the administration of the Rorschach, either because of lack of training or because of the development of personal idiosyncracies on the part of the examiner. These cause considerable concern. Different methods are utilized to obtain a record, — sparse instructions or detailed instructions, encouragement or no encouragement by the examiner, trial blot, no trial blot, minimal inquiry, extensive inquiry, no inquiry, inquiry with the cards in evidence or without showing the cards, questions placed after each card, at the end of the test or after each response, non-committal questions or leading questions, and specific questions on specific responses.

In the probing aspect of the administration, there are as many variations as there are people administering the test. Few administrators proceed in a systematic and controlled manner. Few keep in mind "Card Pull" which reveals the full potential of each card in respect to Rorschach variables

(Ranzoni, Grant and Ives (51)), and which is so valuable in differentiating between the response which is stimulus determined and the one which is personally revealing of the subject himself.

It is important to probe where the subject's responses are equivocal as to location or determinant. It is also valuable to try to determine the potentiality of the subject to use aspects of the blots which were not used spontaneously and to evaluate the strength of his resistance to certain "pressures" which are applied in the probing. To do this, several approaches have been recommended in the course of the years but none developed in a systematic fashion. Some examiners follow Klopfer (37) and utilize an "analogy" period and a "testing-the-limits" procedure. Others follow Shaw (56) and probe for sex populars. Many use the technique of free associating to a crucial response or to all responses given (Janis and Janis (32)) or utilize a word association test in which the percepts of the subject are included (Wanger (60)). In 1946, Hutt and Shor (31) described an extended testing-the-limits procedure with a formal method of recording, recommending it as routine procedure. This appears to be the most systematic procedure ever suggested but it has not been pursued further. To date no systematic probing procedure has been developed.

Thus there are all kinds of variations in Rorschach procedure which we know influence the test performance. Research today has identified innumerable variables in the test situation which affect the subject's reactions and the kind of protocol he gives. The subject's response is influenced by previous set, by his attitudes, his interpretation of the nature and the purpose of the test, by previous training, and by his reactions to the total situation. It is influenced by the nature of the instructions he is given, how they are given, and by the amount of encouragement given or pressure exerted. It is likewise conditioned by the examiner, his sex, his personality, his needs and anxieties, his training and orientation, his definition of the test and his perception of the responses as he receives them. It is further influenced by the interpersonal relations between the subject and the examiner. It is conditioned by the manner of the presentation of the cards and their sequential order. It is influenced by the whole testing situation itself. These variables have been amply reviewed in the literature (12, 28, 34).

Of course more research is needed to determine the special significance of those variables in the Rorschach situation which influence the response record. It is important, for example, that we learn the relationship between specific types of administration and specific kinds of attitudes and factors in the personality of the subject and the examiner on the one hand and aspects of the protocol of the subject on the other. Such data are not available as yet.

It is important to keep in mind, however, that if the Rorschach performance is altered by different test attitudes and behavior on the part of the subject and the examiner, and if it is fundamentally influenced by different conditions which obtain in the total Rorschach situation, some measure of uniformity must be developed in the administration. Further, these variables must be taken into consideration when Rorschach data are integrated and inferences made in the interpretation and when they are subjected to analysis in research.

In this connection, I would like to point out that no systematic procedure has been developed for the testing of children. Certain modifications in the administration of the test have been recommended in order to attract children, interest them, and hold their attention. Clinicians working with children have utilized a variety of methods which they feel are applicable to children (Ames et al (1), Ford

(18), Klopfer et al (38), Ledwith (40), Setze et al (55)). Again it is necessary to study the effects of different kinds of instructions, procedures, and modifications in technique and to determine their respective influence on the Rorschach performance in children. Until this is done, some systematic procedure should be agreed upon for the testing of children, if only to make research results comparable.

In discussing the need to keep in mind the multiplicity of variables which influence the Rorschach performance, I would like to point to the unwise and irresponsible procedure employed in amassing Rorschach data for research purposes. It is not unusual in research to utilize records from the files of hospitals or clinics, administered by a variety of examiners in various degrees of training and experience, and with differing skills, and in different kinds of situations. Such material is grossly inadequate for research purposes and may account for the kind of results we get in so many of our studies. In this connection, we read with considerable interest the current proposal of the Society for Projective Techniques for a Research Registry whose functions in part would be to gather data from various sources and to integrate related material (Bellak (10)). Considerable thought will have to be given to standardization of procedure. Some measures will have to be taken to insure the collection of similar and comparable data to insure accurate recording, to record the extra-Rorschach variables in the individual testing situation, to check as to accuracy and objectivity of the examiner and the like, before data from various sources can be pooled.

Scoring has developed to the point that most examiners use the same or approximately the same general categories, although they may not use the same symbols. Different scoring systems still prevail today. This should not cause any difficulty because, for the most part, scoring is merely a device for classifying responses in terms of special characteristics. If we keep in mind the psychological assumptions underlying the symbols, differences in code are insignificant. What is important however, is how scoring is done, how consistent Rorschach examiners are in their scoring and how scores are used.

There is discernible in practice and in the literature the development of some highly personalized scoring procedures on the part of some examiners and the formulation of arbitrary scoring decisions which have resulted in considerable variation in Rorschach results. There are three problem areas which require consideration — 1) the determination of what should be considered a scorable Rorschach response, 2) the consistency in scoring and the development of adequate scoring criteria, and 3) the change made by some examiners in principles of scoring for some of the Rorschach determinants.

The current procedure on the part of many Rorschach workers to consider *the Rorschach response* only that which is *verbalized* by the subject creates serious inconsistencies and contradictions in scoring. Thus Phillips and Smith specifically state in the introduction to their book,

> " . . . It is essential that the material scored be verbalized . . . " (46 p vi)

Thus "two waiters" in Card III is scored a form response if the subject does not verbalize movement. "A rainbow" for Card VIII is scored form, when the subject fails to verbalize color or insists it is the form which stimulates the response.

This appears to me to be arbitrary scoring, totally alien to the clinical attitude. A determinant by definition reflects features in the stimulus material and in the perceiver himself which contribute to producing the response. An attempt is always made to have the subject give the necessary information in the inquiry. There are however many instances where decision as to the scoring cannot be made on the basis of the verbalizations alone. Many times the subject has experiences in the Rorschach situation which he cannot or will not verbalize but which "determine" his reaction. The clinician is compelled to reconstruct the perceptual experience of the subject on his own. He may study the record and make his decision on the basis of the subject's characteristic performance in similar situations with similar determinants. Or he may consider what most people do in similar situations. It is true that this is subjective procedure on the part of the clinician. But this holds for the Rorschach as a whole and it is true of any clinical instrument.

To restrict one's scoring to verbalizations is to distort the Rorschach. Responses consist of the subject's reaction not only to the blots per se but to the blots in a total social and perceptual field. This includes the test stimuli, the administrator, the whole administrative and interpersonal situation. The verbalizations involved in a response furnish only a part of the subject's reactions. They are important in that they communicate to the examiner what they can about the response. In the last analysis, however, the clinician is interested in the total reaction.

In this connection the article by Levin (41) is of interest. He advances the theory that there are two tests in the Rorschach, Test A, responses in the test proper, and Test B, the subject's performance in the inquiry. He feels that these should be differentiated because they may have special significance. He hypothesizes that the first may reflect need and drive states and the second, defense systems and ego functions. It is difficult to understand what the determinants are in his Test A, since frequently he cannot know from the verbalizations alone without the aid of the inquiry, which is his Test B.

Gibby and his colleagues (21-23) study the relation of the Rorschach free association to the inquiry, considering them two separate phases also. They also seem to view the verbalized determinant in the free association as the "true" determinant and they compare it with the determinant revealed in the inquiry. They present a "new dimension of the Rorschach" which they call "determinant shift from free association to the inquiry" (21). This new dimension appears to differentiate between psychoneurotic and psychotic patients (22) and hallucinatory and delusional patients (23).

The new dimension may be a shift of something, of verbalizations perhaps, or a loosening up of communication in the subject as a result of pressure (questions in the inquiry), but it is not a shift of determinant in the Rorschach sense and it is misleading to call it a "a determinant shift."

The research of Baughman (4) has bearing here. He experimented with the standard Rorschach blots and four modified forms of the blots having the same peripheral form as the originals but with changes in color, shading, internal form, and figure-ground characteristics. On the basis of a study of the performance of groups of neurotic male veterans, he could show among other things that the formation of certain percepts is dependent upon certain stimulus attributes, as color and shading. Thus "bat" in Card I disappeared when shading and black were removed but "butterfly" remained. "Anatomy" disappeared without color in the colored cards. "Bow-tie" and "ribbon" in Card III appeared with or without color.

If these results are substantiated, it indicates what represents our position, that the subject's verbalizations may not and frequently do not reveal all the determinants involved in their reactions.

Baughman (5) recommends the use of modified blots with various alterations in stimulus characteristics in the inquiry period in order to improve Rorschach scoring. The writer has been using this technique for many years in the probing, especially to make decisions on scoring where the subject cannot give the necessary information. A supplementary set of cards with some of these altered stimulus characteristics are employed, — cards with the outlines of the blots, with the blots in solid black, with the colors removed and shading substituted, and with a frame superimposed on the standard shading blots to eliminate outline. This supplementary procedure helps the examiner evaluate the responses of the subject especially where they are equivocal as to determinants.

The procedure of restricting all scoring to verbalizations is adopted no doubt to increase the objectivity of the scoring. However it frequently changes and even distorts the subject's response. An issue which requires immediate clarification is the need to differentiate between a perceptual response and the verbal form in which it is transmitted. Which do we use? Scoring inconsistencies in the response may be responsible in no small measure for inadequate interpretations and may account for some of the negative results we note in current research.

Turning to the scores themselves, for those which require evaluation, namely the normal detail, form quality, the popular and original categories, it is of course necessary to develop objective and appropriate scoring criteria and to agree upon them. This has not yet been attained.

There are for example still discrepancies between lists of normal details of different investigators (6, 9, 25, 37). Beck (6, 9) has revised his list considerably on the basis of new criteria and additional data furnished him by his "normal" sample. It is difficult to accept the changes for some of Beck's new D in the light of the frequency with which they are singled out for interpretation in the experience of other clinicians. The projection from the side area which resembles a "tree" when inverted in Card I, for example, the "heel" of the side figure in III, the projection upward from the top third of VII, the bulge on the "forehead" of the top third of VII, or the inner two sections of the lower red in IX, are not infrequently selected by adults or adolescents it is true, but they are not chosen with sufficient frequency to warrant the score of a normal detail. If we look at the list of forms in Beck's form-level lists, we note for these areas as few as five to eight different forms (which are not popular). It is difficult to find justification for these changes when so few different responses were given to these areas. Further research must establish whether or not the changes which are being suggested are valid.

Klopfer et al (37) retain in their volume the list of normal details originally published in the earlier book, still based on subjective estimate. Their normal D have never been subjected to systematic study. This is similarly true of the list of popular responses which are again presented. Here too there are a few arbitrary elaborations which are difficult to understand. In Card III, for example, the score of "an additional P" is recommended when, instead of the usual human figures in action, the subject gives ". . . dressed up animals. If legs are seen where arms usually are, or non-dressed up animals with two pairs of legs." If the popular response is one given with greatest frequency by a healthy group, such a response would certainly not be a P. Indeed for some scorers, it would be F−. Again, in Card VIII, for the popular four-legged animal, a "tendency toward a P" is scored if the animal is "inaccurately called birds or fish." How could any form which is inaccurate be a P or even a tendency toward a P?

It should be pointed out that while it is not inappropriate for different examiners to determine for themselves upon the respective criteria for these scores, discrepancies do not make for agreement among research clinicians.

Nor is there adequate agreement as to form-level scoring (Kimball, (35)). Revisions in scoring criteria for F+ and F− have been published by Beck (6) for adults and Hertz (25) for adolescents, using selective groups. Hertz (25) continued to use as her criterion frequency of occurence in an adolescent population and subjective judgment of three to five Rorschach judges for those forms which were so infrequent that the numerical criterion was not applicable. Of course, forms which do not appear in the Frequency Tables must be judged in terms of those which do appear there. Whether the forms appear in the Frequency Tables or not, they must be judged subjectively on the basis of "fitness" of the contour of the percept and the outline of the blot area. In the last analysis this congruence is subjectively judged by the scorer, with the aid of those tables on form-level which are available.

Beck (6, 9) similarly used as one of his criteria for F+, frequency of occurrence in a "normal" group. His basis, however, was the frequency with which his normal and superior groups gave a response as compared with the frequency with which his schizophrenic and feebleminded groups gave the response. Those forms which are seen by three or more persons in his "normal" sample of 157 adults (9) are considered the F+. It is known, however, that many forms are given which may not occur in selected standardization groups, which "fit" the area into which they are projected. An infrequent response need not necessarily be one whose form does not fit the outline of the blot to which it refers. Indeed, there are many original forms which are highly accurate which do not occur with the frequency required by Beck and which must receive an F+ if the criterion of "fitness" is adhered to.

Phillips and Smith (46) have adopted a new approach in terms of what one should demand of a form wherever it appears, in order to consider it F+. For each class of response they have set up criteria for accuracy. Thus "a response in which the basic form is human is scored F+ if the area to which it is developed has the following attributes: (1) a clearly defined "head" section, (2) a "body" section longer than it is wide and (3) long narrow projections which serve as arm and leg" (46 p 25-26). No matter how minutely defined such criteria are, it is difficult to understand how the outline of the specific blot location to which the content refers can be eliminated from consideration of form-level. There are times, for example, when the area itself does not warrant the projection of "a clearly defined head" or "arm" or "leg." In Card I, for example, for the upper space inside the blot the form "White Sister" fits the outline of the area and is scored F+ despite the fact neither the head nor the arm nor the leg is clearly defined.

Others investigators have turned to rating scales to evaluate form level. Thus Klopfer and his colleagues (37) have developed a form-level rating scale in terms of accuracy, specification and organization, all based on subjective judgment. Despite the fact that they have reduced the form quality rating to numbers and obtained a sum in terms or a numerical score, the evaluations on each step are highly subjective. We have no assurance as yet that their total form level score based on a series of subjective judgments is any more reliable than one decision as to the quality of the form.

Sarason (53) and Janoff (33) report on the use of a different kind of rating scale, where form quality is viewed as a continuum and the scale extends "from those cases where a definite form is intended by the subject and is clearly and accurately seen by him, through cases where no definite form is intended and the subject should not be penalized, to those cases where there is definite form intended but the concept chosen does not fit the area of the ink blot indicated" (53 p.

238-239). This scale has the advantage of restricting itself to the criterion of "fitness." Further a Pearson correlation of .90 is reported between two psychologists who scored 50 responses from protocols selected at random.

It appears that whatever technique of evaluation is used for judging form level, in the last analysis subjective judgment is utilized as to the degree to which the outline of the percept "fits" the outline of the area into which it is projected.

As yet, there is no agreement on criteria for evaluating form level. Studies do not reflect adequate reliability of the evaluations of form level made by judges with varying degrees of Rorschach experience (Kimball (36), Walker (59)). Most of the research studies were however poorly designed. Verbalizations were used, inquiry was lacking, and instructions were confusing. Scorers were not given a specific standard reference population on which to base their judgments.

Despite these inadequacies in research design, there is of course urgent need to develop appropriate scoring criteria for different age groups and different cultural groups. Until such a time as adequate criteria have been established, scorers should make explicit the criteria they use and the population on which they have developed their criteria. This has not been systematically done. Failure to develop adequate criteria, to agree upon them, to make them public, and to utilize them in appropriate fashion, has definitely influenced the reliability of our scoring and has prevented us from developing a consistent body of normative data.

In this connection, it should be noted that the scorer is not always consistent in his scoring. So often in research and in practice, clinicians using the Klopfer system include % F+ which is not incorporated in that system. Or those who use Beck's system find it necessary to include animal movement (FM) and movement in nature (m).

Again, many clinicians apply to their records normative data based on a different scoring system than that which they use. For the form category alone, for example, there is a diversity of patterns, — Klopfer's *F refined* (37), Hertz's *F crude* (27), *Beck's Lamda Index* (6), *Rapaport's F prevalent* (52), *Hertz's F+ Primary* (27) *Feldman's % F+* (15) and *Schafer's extended % F+* (54), some of which coincide, others do not. Thus care must be taken to use the F pattern in its appropriate scoring system. And norms for the *%F+ (Rorschach)* based on one set of scoring criteria must not be applied to this pattern where the F+ is evaluated on the basis of another set of scoring criteria.

Another problem area in scoring involves a definite change in principle of scoring co-determinants, — form in conjunction with color and shading. According to the usual procedure, FC and CF, and F Sh (shading in general whatever symbol is used, —F (C) or FV or FK), and Sh F (whatever symbols is used, — (C) F or VF or KF) are determined in terms of the extent to which either factor is primary, i.e. most influential in the determination of a response. In the interest of objectivity in scoring, a new principle is adopted by Klopfer et al (37) and followed by many others, where definiteness of form of the concept determines the primacy of the codeterminants, whatever the subject says. Thus FC is indicated when bright color is used as a characteristic of an object which has definite class characteristics (blue birds, red butterfly, carrots) and CF where bright color is used as a characteristic of an object which has variable form characteristics (coral, explosion).

Similarly, scores are arbitrarily assigned in some of the shading categories whether or not the shape or the shading plays a primary or secondary role in the explanation of the subject. Thus FK is used "even though the form of the blot is unimportant and the concept rather shapeless but the shading contributed to the three dimensional effect," and Fc where the texture effect is either itself highly differentiated or where the object . . . has definite form." The score cF is reserved for undifferentiated concepts and does not indicate degree of emphasis (37).

It is contended that subjects are often inaccurate in their estimates of the relative influence of color or shading and form, and that the clinician's judgment is unjustified. It should be emphasized that for the rest of the scores, the inquiry is utilized and the subject's communications taken into consideration. There is no reason why these scores should be different. As for the clinician participating in the decision on the score, in all the scoring the clinician is inseparable from the test. It must be assumed that he is sufficiently skilled and experienced to make the final determination.

It is suggested by Pick (47) that this inconsistency in scoring really represents the difference between using objective criteria (i.e., features in the stimulus which produce the response) and subjective (features projected into the stimulus material by the subject), and that both scoring should be used. This would be most confusing. He suggests however that in the inquiry Baughman's modified blots (5) should be presented and additional inquiry be made to make the final decision as to the appropriate score.

Of course any principle of scoring may be adopted and hypotheses formulated to justify the change of principle. It must be kept in mind however, that the interpretative principles utilized with orthodox scoring must be applied with caution to the new type of scoring. It is also important to stress that research based on those scores is affected. Results of different studies cannot be compared, and material cannot be pooled from different investigators to make up a larger body of data.

A progressive step has been taken in the area of scoring in emphasizing the qualitative features of the scoring categories. Today, most Rorschach clinicians include in the scoring column scoring categories which are qualitatively more refined or qualitative notes of some kind. Thus Friedman (19) has refined the scoring of the location categories from a genetic point of view and has demonstrated that they reflect different psychological activities. Hertz (27) records these qualitative differentations on her psychogram (WO+, WO−, W+, W−, W vague, W P, W combinatory, W confabulatory and W contaminatory, etc.).

Most clinicians indicate in some manner the qualitatively different kinds of F+ and F− and human movement. Stein (57) in his study of developmental changes in the content of the movement responses shows important qualitative aspects of the M by classifying them not only as assertive, compliant and ambiguous, but also in terms of purpose or meaning of the activity. Molish (44) indicates not only P but *P failure* and notes especially the substitute content given for the popular when such is given.

This trend to emphasize the qualitative features in scoring is noted especially in the area of content. Many examiners indicate in the scoring column not only the class of content but qualitative notes in reference to specific content, test attitudes, special features of the response, style of communication, and the like. Some clinicians utilize the code for anxiety and hostility incorporated in the scale by Elizur (14), and some the code for hostility, anxiety, bodily preoccupation, dependency, and positive feelings suggested by De Vos (13). Many employ the indications of deviant verbalization originally suggested by Rapaport (52) and included in the scale of Watkins and Stauffacher (61). Finally the suggestions included in the book by Schafer (54) on thematic analysis are likewise used today.

A scheme of qualitative notations is used by the writer (24) indicating attitudes, references to specific themes, kinds of personal and self references, personally saturated features of the response, stylistic features of the response, kinds of perceptual and conceptual distortions, and style in mode of verbal communication.

Procedures such as these are necessary if we wish to utilize the full richness of the Rorschach data. Many studies already show the value of these additional qualitative classifications (13, 14, 49, 52, 54, 61). It is imperative of course that we make explicit the criteria for assigning these qualitative scores and that we establish the reliability of this qualitative scoring system. It is of interest to note that those investigators who have attempted to subject these qualitative categories to systematic study and to develop numerical indices have already been partially successful. Most of the investigators report satisfactory reliability for the summary indices. They get considerably lower reliability however for the specific qualitative categories (49, 61).

Considerable work must be done in this promising area to help focus on the qualitative aspects of the Rorschach record. In my judgment greater reliability will be attained for the individual qualitative items if at first they are descriptive and not interpretative or theory oriented. Thus the hostility notation can be restricted to content which directly reflects hostility and not inferred from depreciation or dehumanization of figures in the scoring column. "Pincer concepts" can be noted as such rather than as aggressive concepts. The note "Cut-off" can be utilized and not "castration anxiety" which is an interpretation. Once the descriptive categories are summarized, they can be fitted into any theory oriented system of categorizations depending upon the orientation of the examiner.

This procedure would improve the reliability of the scoring since it is easier to identify descriptive items than to interpret their meaning. It serves also to avoid a wild kind of interpretation. Too often notations appear in the scoring column consisting of symbolic interpretations made on an isolated response without other evidence.

Emphasis on the qualitative aspects of the response record serves to focus attention on that which is probably the most valuable aspect of the record. It may well be that this approach will counteract the deficiencies and limitations of the procedure of using static scores and content categories. Of course this approach places a great deal of responsibility on the clinician. If however the qualitative features are well defined and carefully delineated, the skilled clinician should be able to identify them, summarize them as readily as the more formal factors and incorporate them into an extended qualitative scoring system.

II. INADEQUACY OF NORMATIVE DATA

The problem of adequate norms for the various scoring categories still plagues us. Whatever be our scoring system or scoring criteria and whatever be our mode of approach to the interpretation of a record, we must have adequate reference norms with which to judge our scores. Much work has been done in this area. Norms have been reported for many age groups, — for preschool children, school children, adolescents and adults of different mental levels. Much more work has to be done, however.

Unfortunately we do not have adequate norms for judging the records of many kinds of individuals, especially the "normal" individual. In discussing projective methods in general, Gallagher (20) points out that the difficulty is due in part to our confusion as to what normality is. In many of our studies, "normal" groups are really those not under psychiatric or psychological treatment. Again, a statistical norm is used as the criterion for obtaining a normal population. Or the "normal" group is described in terms of the absence of pathological traits.

Gallagher's criticisms apply to many of the normative studies with the Rorschach Method. Norms have been reported for example for adults by Beck and his colleagues (9). Despite their arduous efforts to fashion a normal sample of adults selecting them on the basis of age, level of skill, education, and the like, the group is made up of volunteers from a Chicago mail order house and hence is highly selective. In addition, the investigators use a statistical norm as the criterion of normality. In discussing their results, however, they refer to the group as an emotionally healthy one. Viewing some of the characteristics of the group which they themselves enumerate — sterile thinking, instability, easy excitability, non-vigorous mental approach and the like, — we question whether the personality they describe is the "normal" one. As a matter of fact, Beck himself asks the question, "Is this the make-up of our present composite personality?" Auld (2) has discussed the representativeness of this "normal" sample also.

It must be admitted, however, that the norms on the Spiegle sample are the best which are available for adults. Wedemeyer's norms (62) for a group of navy enlisted men of average intelligence is based on records admittedly meager and atypical. Neff and Lidz (45) report norms for a sample of army enlisted personnel who roughly fit the statistical concept of a normal sample on the basis of AGCT scores. The investigators show that their norms deviate considerably from those published by Klopfer et al (37). Klopfer however presents his norms as ideal norms.

Children's norms are likewise sparse. The adolescent norms of McFate and Orr (43) are valuable but they refer to highly selective groups. Thetford, Molish and Beck (58) publish norms for 155 Chicago Public school Children for ages six to ten, and Rabin and Beck (50) norms for school children six to seventeen years. The children were selected on the basis of average intelligence, average academic achievement and freedom from behavior problems. No attempt was made, however, to develop scoring criteria appropriate for children of the younger age levels. Other studies indicate that normal details and the populars, for example, are different for children of different age groups (Ames et al (1), Carlson (11), Hertz and Ebert (29)). In the light of the interpretations applied to the results obtained, it seems to us important that appropriate normative criteria be utilized for children. Thus for Rabin and Beck "intellectual approach is the method by which each member of this normal group approaches his world and resolves it into its component parts" (50 p. 62). In this study, it is really the *adult world* and not the world as the child sees it. Again, the popular is the "index of the extent to which an individual is intellectually conforming to the thinking of his group." According to the criteria used in the study, it is the index of conformity to the thinking of the *adult group*.

Ledwith's norms (40) for six year old children published as a part of a larger longitudinal study likewise utilizes Klopfer's adult criteria for scoring. The usefulness of these norms is decreased because of the failure to develop and apply appropriate scoring criteria.

The so called normal groups utilized also vary as to the inclusion of behavior problems. Thus the studies with Chicago Public School Children (50, 58) include only those children who are free from behavior problems. In Carlson's study (11) children with "consistently low school marks" and those with "more serious personality problems" were excluded. Ames and her colleagues (1) excluded "serious" behavior problems but included the more "normal" problems. Setze and his colleagues (55) dropped children from their six, seven and eight year old groups with an excessive number of points on a checklist filled in by teachers.

Again, the norms published by Ames et al (1) are hardly representative since three fourths of the parents of the children come from professional or managerial groups. Their norms can be applied only to highly intelligent children of similar socio-economic status. Carlson's norms (11) for eight year old children are based on a middle socioeconomic sample of the population. Setze et al (55) report norms for children from middle class Chicago neighborhoods, from both parochial schools and public schools. The recent studies of Fiedler and Stone (16,17) demonstrate the pronounced effect of socio-economic status on Rorschach norms. They find marked differences between the Rorschach norms based on the records of their groups of children from a low socio-economic level and those of Ames.

Thus despite considerable research and sincere attempts to amass normative data, norms exist for only fragmentary groups for the most part, and different criteria of normality have been applied. Few studies are based on random samples of specific universes. Many investigators note the limitations of their research. Many emphasize that their results must be considered in terms of their sample population and caution against indiscriminate application. Most studies, however, ignore the problem of norms and generalize from what is available.

There is need to determine upon a consistent definition of what a normal group is. There is need to make explicit in research the criterion used for normality. There is urgent need for agreement among Rorschach clinicians as to criteria and procedure so that appropriate norms for different age-sex groups, for developmental groups, and for groups from various socio-economic levels may be amassed.

SUMMARY

I have touched on some controversial aspects of handling the Rorschach method, pointed out the diversity of opinions and approaches in procedure and have suggested that they may be related at least in part to the negative results which seem to characterize most of our research. It may well be that many of the inconsistencies, contradictions and shortcomings of our procedure and the inadequacy of the clinicians using the method prevent fulfillment of what we most desire, — establishing the validity of the Rorschach method.

It is now obvious that in the administration of the Rorschach and in the handling of Rorschach data, skilled clinicians must be utilized, clinicians not only trained in the use of the method but equipped in general in knowledge of personality and especially in psychopathology. It is interesting to look back and remember that some of us used to think that the Rorschach method is an easy procedure to administer and to score. It is clear now that the Rorschach is a highly complex multidimensional instrument which requires the full utilization of the skills of the clinician.

There is compelling need to refocus attention on fundamentals of procedure and to place under scrutiny the idiosyncratic methods which have developed in the last few years. In the last analysis, the raw data obtained from records furnish the basis for our inferences in the interpretation and affect the acceptability and the validity of our contributions whether they be in the clinic or in research.

There is need for more intensive work on the technical aspects of the method in a coordinated manner. There is need to develop more uniformity in procedure and scoring and to amass a consistent body of *normative* data. There is need to select and train clinicians who will be able to handle a clinical instrument and capturè the complex phenomena revealed by a multidimensional instrument. Indeed there is need to do research on selection and training methods, on the clinician himself, and the clinical process.

Finally there is need for an all embracing programmatic attack on some of the problems we have been discussing in the form of coordinated and extensive large scale programs. Whatever we do in the interpretation of a record, it is clear that Rorschach clinicians must exercise some self-discipline, standardize procedures to the extent to which they can be standardized, develop a consistent body of normative data, and train clinicians to handle the Rorschach as it should be handled. Perhaps with concerted and systematic effort and with the proper focus, we will be able to develop a Rorschach method which will provide consistant and reliable data for basic research.

REFERENCES

1. Ames, Louise D., Leonard, Janet, Metraux, Ruth W., and Walker, R.N. *Child Rorschach Responses*. New York: Hoeber, 1952.

2. Auld, F. Jr. Is Beck's Sample of Rorschach Testees Representative? *J. gen. Psychol.*, 1957, *56*, 135-136.

3. Baer, A. Le test de Rorschach interpreté du point de vue analytique. *Revue Franç. Psychoanal.*, 1950, *14*, 455-503.

4. Baughman, E. E. A comparative analysis of Rorschach forms with altered stimulus characteristics. *J. proj. Tech.*, 1954, *18*, 151-165.

5. Beck, S. J. Regarding "The two tests in the Rorschach" by Levin. *J. proj. Tech.*, 1954, *18*, 165-168.

6. Beck, S. J. *Rorschach's test*. I. *Basic processes*. New York: Grune and Stratton, 1950.

7. Beck, S. J. Rorschach's test. II. *A variety of personality pictures*. New York: Grune and Stratton, 1949.

8. Beck, S. J. *Rorschach's test*. III. *Advances in interpretation*. New York: Grune and Stratton, 1952.

9. Beck, S. J., Rabin, A. I., Thiesen, W. G., Molish, H., and Thetford, W. N. The normal personality as projected in the Rorschach Test. *J. Psychol.*, 1950, *30*, 241-298.

10. Bellak, L. The president's report. *J. proj. Tech.*, 1957, *21*, 425-427.

11. Carlson, R. A normative Study of Rorschach responses of eight year old children. *J. proj. Tech.*, 1952, *16*, 56-65.

12. Cronbach, L. J. Assessment of individual differences. In *Annual review of psychology*, 1956, *7*, 173-196.

13. De Vos, G. A quantitative approach to affective symbolism in Rorschach responses. *J. proj. Tech.*, 1952, *16*, 133-150.

14. Elizur, A. Content analysis of the Rorschach with regard to anxiety and hostility. *Rorsch. Res. Exch.*, 1949, *13*, 247-284.

15. Feldman, M. J., Gursslin, Carolyn, Kaplan, M. L., and Sharlock, Nidia. A preliminary study to develop a more discriminating F+ ratio. *J. clin. Psychol.*, 1954, *10*, 47-51.

16. Fiedler, Miriam F., and Stone, L. J. The Rorschachs of selected groups of children in comparison with published norms: I. The effect of mild hearing defects on Rorschach performance. *J. proj. Tech.*, 1956, *20*, 273-275.

17. .... The Rorschachs of selective groups of children in comparison with published norms: II. The effect of socioeconomic status on Rorschach performance. *J. proj. Tech.*, 1956, *20*, 273-275.

18. Ford, M. The application of the Rorschach test to young children. *Univ. Minn. Child Welf. Monogr.*, 1946, No. 23.

19. Friedman, H. Perceptual regression in schizophrenia. An hypothesis suggested by the use of the Rorschach test. *J. proj. Tech.*, 1953, *17*, 171-185.

20. Gallagher, J. J. Normality and projective techniques. *J. abnorm. soc. Psychol.*, 1955, *50*, 250-264.

21. Gibby, R. G. and Stotsky, B. A. The relation of Rorschach free association to Inquiry. *J. consult. Psychol.*, 1953, *17*, 359-363.

22. Gibby, R. G. Determinant shift of psychoneurotic and psychotic patients. *J. consult. Psychol.*, 1954, *13*, 267-270.

23. Gibby, R. G., Stotsky, B. A., Harrington, R. L., and Thomas, R. Rorschach determinant shift among hallucinatory and delusional patients. *J. consult. Psychol.*, 1955, *19*, 44-46.

24. Hertz, Marguerite R. Evaluation of adjustment in terms of the Rorschach Method. Paper read before the Midwestern Psychological Association. Chicago: 1951.

25. Hertz, Marguerite R. *Frequency tables for scoring responses to the Rorschach inkblot test*. Third Edition. Cleveland: Press of Western Reserve Univ., 1951.

26. Hertz, Marguerite R. Rorschach: twenty years after. *Psychol. Bull.*, 1942, *39*, 529-572.

27. Hertz, Marguerite R. *Summary Sheet, Rorschach Psychogram*. Cleveland: Press of Western Reserve Univ., 1951.

28. Hertz, Marguerite R. The Rorschach: thirty years after. In *Progress in clinical psychology*, Brower, D., and Abt, L. E.,

(Eds.), 1952, Vol. I, 108-148.

29. Hertz, Marguerite R., and Ebert, Elizabeth H. The mental procedure of six and eight year old children as revealed by the Rorschach inkblot method, *Rorsch. Res. Exch.*, 1944, *8*, 10-30.

30. Holt, R. R. Implications of some contemporary personality theories. In *Developments in the Rorschach technique*, Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R., (Eds.). Yonkers: World Book, 1954, Vol. I, 501-560.

31. Hutt, M. L. and Shor, J. Rationale for routine Rorschach "Testing-the-limits". *Rorsch. Res. Exch.*, 1946, *10*, 70-76.

32. Janis, M. G., and Janis, I. L. A supplementary test based on free associations to Rorschach responses. *Rorsch. Res. Exch.*, 1946, *10*, 1-19.

33. Janoff, Irma Z. The relation between Rorschach form quality measures and children's behavior. Yale University: Ph.D. dissertation, 1951.

34. Jensen, A. R. Personality. *Annual revue of psychology*, 1958, *9*, 295-322.

35. Kimball, Alice J. History of form-level appraisal in the Rorschach. *J. proj. Tech.*, 1950, *14*, 134-152.

36. Kimball, Alice J. Evaluation of form-level in the Rorschach. *J. proj. Tech.*, 1950, *14*, 219-244.

37. Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R. *Developments in the Rorschach technique*. Vol. I. *Technique and theory*. Yonkers-on-Hudson: World Book, 1954.

38. Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R. *Developments in Rorschach technique*. Vol. II. *Technique and theory*. Yonkers-on-Hudson: World Book, 1957.

39. Korner, Anneliese F. Limitations of projective techniques: apparent and real. *J. proj. Tech.*, 1956, *20*, 32-47.

40. Ledwith, Nettie H. Rorschach responses of the elementary school child: progress report. *J. proj. Tech.*, 1952, *16*, 30-35.

41. Levin, M. M. The two tests in the Rorschach. *J. proj. Tech.*, 1953, *17*, 471-473.

42. MacFarlane, Jean W., and Tuddenham, D. Problems in the validation of projective techniques. In *An introduction to projective techniques*. Harold U. Anderson and Gladys L. Anderson, (Eds.), 1951, Chapter 2, 26-54.

43. McFate, Marguerite Q. and Orr, Frances G. Through adolescence with the Rorschach. *Rorsch. Res. Exch.*, 1949, *13*, 302-319.

44. Molish, H. D. The popular response in Rorschach records of normals, neurotics and schizophrenics. *Amer. J. Orthopsychiat.*, 1951, *21*, 523-531.

45. Neff, W. S., and Lidz, T. Rorschach pattern of normal subjects of graded intelligence. *J. proj. Tech.*, 1951, *15*, 45-57.

46. Phillips, L., and Smith, J. G. *Rorschach interpretations: advanced technique.* New York: Grune and Stratton, 1953.

47. Pick, T. A critique of current methods of Rorschach scoring. *J. proj. Tech.*, 1956, *20*, 318-325.

48. Piotrowski, Z. A. *Perceptanalysis*. N.Y.: Macmillan, 1957.

49. Pope, B., and Jensen, A. R. The Rorschach as an index of pathological thinking. *J. proj. Tech.*, 1957, *21*, 54-62.

50. Rabin, A. I., and Beck, S. J. Genetic aspects of some Rorschach factors. *Amer. J. Orthopsychiat.*, 1950, *20*, 595-599.

51. Ranzoni, Jane H., Grant, Marguerite Q., and Ives, Virginia. Rorschach "card-pull" in a normal adolescent population. *J. proj. Tech.*, 1950, *14*, 107-133.

52. Rapaport, D., Gill, M., and Schafer, R. *Diagnostic psychological testing: the theory, statistical evaluation and diagnostic application of a battery of tests*. Vol. II, Chicago: Year Book Publ., 1946.

53. Sarason, Seymour B. *The clinical interaction: with special reference to the Rorschach*. New York: Harper, 1954.

54. Schafer, Roy. *Psychoanalytic interpretation in Rorschach testing: theory and application*. New York: Grune and Stratton, 1954.

55. Setze, L. A., Setze, Katusha D., Baldwin, Joan C., Doyle, C. I., and Kobler, F. J. A Rorschach experiment with six, seven, and eight year old children. *J. proj. Tech.*, 1957, *21*, 166-171.

56. Shaw, B. "Sex populars" in the Rorschach Test. *J. abnorm. soc. Psychol.*, 1948, *43*, 466-470.

57. Stein, H. Developmental changes in content of movement responses. *J. proj. Tech.*, 1956, *20*, 216-223.

58. Thetford, W. N., Molish, H. B., and Beck, S. J. Developmental aspects of personality structure in normal children. *J. proj. Tech.*, 1951, *15*, 58-78.

59. Walker, R. G. An approach to standardization of Rorschach form-level. *J. proj. Tech.*, 1953, *17*, 426-436.

60. Wanger, J. C. Technique reported to be in use in the Bronx Veterans Administration Hospital.

61. Watkins, J. G. and Stauffacher, J. C. An index of pathological thinking in the Rorschach. *J. proj. Tech.*, 1952, *16*, 276-286.

62. Wedemeyer, Barbara. Rorschach statistics on a group of 136 normal men. *J. Psychol.*, 1954, *37*, 51-58.

Received June 6, 1958
Revision received October 13, 1958

Cypress Knees and the Blind

Response of Blind Subjects to the Kerman Cypress Knee Projective Technic (KCK)

EDWARD F. KERMAN, M.D.
Baltimore, Maryland

The Kerman Cypress Knee Projective Technic (KCK) is a new test that uses as stimulus objects rubber replicas of six original cypress knees. The cypress knee, for the information of those unfamiliar with it, is an outgrowth from the roots of the cypress tree (Taxodium distichum) that has found its place in our culture as an ornamental object, appealing to the observer because of its inherent capacity to stimulate imaginative responses to its tortuous, ambiguous form.

This three-dimensional piece has a number of attributes that makes it particularly well suited as a test object in a new projective technic. As a natural growth it is, obviously, unstructured. Because of its third dimension it may be viewed from different perspectives thus engendering an endless variety of images. As an object of 'natural art,' as it were, it invites human preference or dislike, lending itself well to object choice. As a solid figure it is subject to handling or avoidance of contact. Most unique, however, and most relevant to its use as a stimulus object in a projective technic is its capacity to serve as a symbol, to represent external objects towards which the subject reacts according to the nature of his own internalized objects and his methods of dealing with them.

In the course of his researches with the KCK administered to sighted subjects, it occurred to the writer that the cypress knee, as a three-dimensional form, might be a suitable test object to be used in a projective technic for the blind. A group of totally blind subjects was selected and tested with the KCK. This report deals with the description of a test performance and analysis of the record of one of the members of this group. Six subjects were tested. Three were male, three female; their ages ranged from 15 through 18. The record of only one of these subjects has been chosen for presentation in this report since space does not permit the use of all six.

The method of administration of the test, the discussion of its theoretical aspects, and the analyses of the records of sighted subjects have been reported elsewhere in considerable detail (1, 2, 3). For the purpose of orienting the reader, the following brief summary may be useful.

In administering the KCK, three testing situations are used. They are: 1) Object-choice, consisting of a) preferential sequence and b) value judgment; 2) Projective images, consisting of a) perceptual responses and b) titling of the objects; and 3) Story construction, consisting of a) the non-directive story and b) the directive story. In the *preferential sequence* part of the test, the subject is asked to designate his choices, from 1 to 6, in the order of preference based on non-verbalized like and dislike. Under *value judgment,* he is asked to state the reasons for his choices. The *perceptual response* section is one in which the subject is asked to tell the examiner what images he perceives in the objects. Under *titling of the objects,* the subject is asked to give a name or title to each one. The *non-directive story* is one in which the subject uses as characters those images which he has already perceived in the objects. In the *directive story,* he is asked to assign to one object the role of mother, to another the role of father, and to a third the role of child and, with these characters so designated, tell another story.

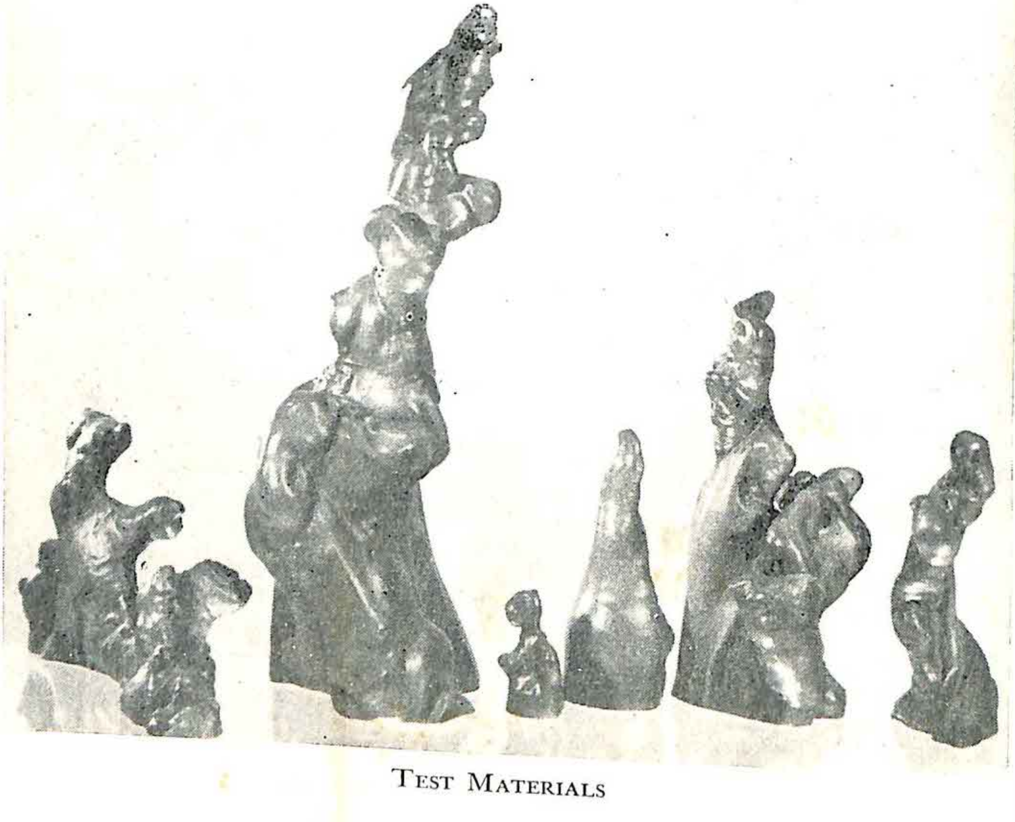
Analysis of records is based on Fairbairn's object-relations theory of the personality (4) and consists of: 1) Determination of the symbolic meaning or object-representation of each test object; 2) Assessment of the subject's attitude toward the objects in terms of acceptance, rejection or ambivalence; and 3) Inquiry into the object-relations technics employed by the subject in dealing with his objects.

Only the briefest sort of outline of Fairbairn's theory can be presented in the limited space available for it in this report. According to this theory, libido is considered to be essentially object-seeking. Erotogenic zones are not in themselves primary determinants of libidinal aims, but channels mediating primary object-seeking aims of the ego.

The process of ego-development is regarded as having three states: 1) A stage of infantile dependence (corresponding to Abraham's 'oral phases'); 2) A transitional stage; and 3) A stage of adult or mature dependence (corresponding to Abraham's 'genital phase').

Schizophrenia and depression are etiologically related to disturbances of development during the stage of infantile dependence – schizophrenia being related to difficulties arising in object-relationships over sucking (loving), and depression being related to difficulties arising in object-relationships over biting (hating).

Obsessional, paranoid, hysterical and phobic symptoms derive their etiological significance from the fact that they reflect the operation of four specific technics employed by the ego in the transitional stage in an attempt to deal with difficulties arising over object-relationships during this stage on the basis of the endopsychic situations which have resulted from the internalization of objects with which the ego has had relationships during



TEST MATERIALS

the stage of infantile dependence. These four transitional technics operate functionally as defenses against the emergence of schizoid and depressive tendencies originating during the first stage of ego-development.

Concerning the nature of internalized objects incorporated by the ego in the early stages of ego-development, the first object to be internalized is the *pre-ambivalent object* of the early oral phase; the establishment of ambivalence leads to an inner situation in which the unsplit ego is confronted with an *internalized ambivalent object;* this object is then split into three objects: a group of 'bad' objects consisting of an exciting object and a rejecting object, and a 'good' object, viz. the nucleus of the original object.

As a result of the analysis of KCK records in the light of Fairbairn's theory one may gain information of a psychodiagnostic and a psychodynamic nature. Diagnostically, one may place the subject into one or more of eight categories depending upon the object-relations technic that he displays in his test performance. These psychodiagnostic classifications are: the schizoid, the depressive, the phobic, the obsessional, the hysterical, the paranoid, the delinquent, and the organic reaction types. Psychodynamically, one is enabled to understand the symbolic meaning of the elements comprising the subject's outer world of reality (i.e. his external objects) in the light of the elements comprising his inner world of reality (i.e. his internalized objects).

With this brief introduction to the purpose and method of the KCK as it pertains to all subjects, sighted as well as blind, one turns to examine the record of an illustrative case.

CASE STUDY

Subject. A single, white male, aged 18. High school student.

Test performance (January 30, 1958):

Behavior: The subject is poised, agreeable, cooperative, articulate and intelligent. He enters into the test situation willingly with the comment that he has always liked to take psychological tests of various kinds. He handles the test objects with rapid finger movements and gains a good impression of their morphological characteristics. At the end of the test, he asks the examiner to describe the color of the test objects and shows interest in the dictating machine used to record his performance.

Object-choice:

Preferential sequence: "It's surprising how roughly many of these resemble animals." Subject then gives his sequence as 5-6—3-2—1-4.

Value-judgment:

5: "It's hard to say. It kind of makes me think of one of these Grecian monsters or something that looks like it's got numerous heads. That roughly resembles a head and this—another resembles a very thickish neck with a small head. And this—looks like it may be some sort of an arm or an appendage such as an arm. I don't know. It just looks very unique to me—the way the three heads are—or the three stems, whatever they're called. And other than that I don't know. I just like it."

6: "Well, this one seems to me to be more or less like a figurine. It has almost a human—well, sort of a human shape. It's got a sloping silhouette like a woman that's, you know, kinda graceful, nice curves. Head's not very well shaped. The body's not either but it's just what it reminds me of. Looks like it might possibly be a mermaid with this thing along here like a fish's tail."

3: "Well, this little one—I like it because it's so very little. Looks like it might be a baby angel. Looks like that could possibly be a wing and that could possibly be a wing. A little different in shape. This looks like it might be a little angel or maybe a little ghost—a very little ghost. It has a—like it's got a flowing gown on—

like it didn't have room to push its hands through. That sorta—doesn't have much shape for a head—it looks a little like a ghost in that respect. And I like it because it's little."

2: "Well, this one—I don't know—just looking at it first off it looks something like a giraffe. The neck is kinda thickish but it's got little bumps on top of it like a giraffe's head does—little horns like. I don't know what that arm would be in the way there for but—kinda looks like he's got longish sort of legs. Looks like he might have a very short body and, just looking at it very roughly, it resembles a figurine of a giraffe."

1: "And this one here, I don't specially like but I like it better than this one (#4) because it's not as plain. This (#4) is plain—looks like a cow horn. And this (#1) I like—I don't like as well as any of the others. It doesn't seem to have any significance. It's got more detail to it than this plain one does, the last one (#4)."

4: "It's so plain. I don't like anything real plain."

Projective Images:

Percepts:

5: "Well, this also seems like it could be a fountain with these three different things having faucets coming out of them in the uttermost ends. This little head here looks like it might be part of a rabbit—sloping ears coming back. And mostly all of them remind me of these Walt Disney kind of toys—big ears—naturally they're made out of plastic—now that would be the difference. And that also looks like it might be a rabbit ear. There's not much else that I can think of for that. It also looks like it might be one of those stalactites that are in a cavern."

6: "And this is the figure of a woman—it's the only thing that reminds me of—except possibly one of these—it kinda puts me in mind of a picture where it has a woman as sort of the trunk of a willow tree. It looks like it might have the veily-like leaves coming all around it. Looks like that, too, might be a nice fountain."

3: "And this little one. I told you about all of that as I could. Because that is so simple. In particular, it reminds me of Casper the ghost, who's a little mischievous fellow."

2: "And this, as I said, could possibly be a giraffe or many of those prehistoric monsters—maybe a dinosaur or something like that. Or it could be sort of a mountain peak—one of these isolated little fingers that sticks up way into the sky out of nowhere. And it seems to be a kind of lonely spectre sticking out from the regular range."

1: "And this—when I first looked at this it reminded me of something under the sea for some reason. Like some type of growth under the sea. A lot of little shells piled up together. And then this here—it seems to remind me of one of these little puppets like—the little hand puppets—like it could be one of these odd looking eerie heads—like a wild animal's head in some respect."

4: "And then the last one, as I said, the only thing that that looks like to me would be a cow's horn or possibly a badly made ice cream cone or another stalactite or a mountain. It's so plain there's not much to it."

Titles:

6: Venus, the Second.

5: "There's just one name that comes to me—it's that chemical law—it's Avogadro. That just seems to strike it. Avogadro."

3: Casper.

2: "I don't know what I'd call that." (Long pause) "Just real quick I'd call it The Pinnacle."

1: Beneath the Sea.

4: The Cow's Horn.

Story construction:

Non-directive story:

"Real quickly, the first thing I think of is little Casper, here (#3). He's looking for a real pretty lady, so he hears tell of this one (#6)—hears tell of this Venus. And he wants to go looking for her. At first, possibly, he goes under the sea and he encounters that obstacle there (#1)—it's only a scene, nothing living. And then possibly in his other travels he might run into this monster there (#5). It might frighten him terrifically. Well, then, using this last one (#2) we could possibly make it a mountain or a peak that he's supposed to be able to see the beautiful Venus from. And since he's never seen her, naturally he knows not what she looks like. So he climbs the peak and looks around. At the end of his journey all he can see is plain—a thin sort of mountain standing there. And he never finds his beautiful lady. That's all I can think of."

Directive-story: #3 is child; #6 is mother; #2 is father.

"Is it father, mother and son or do I need to consider their shapes and size?" (It's your story.) "The first thing—I can think of no use at all for that (#1). And the only thing I can think of is that little Junior here (#3)—whenever he's given an allowance or anything he never saves it—he wants to go out and buy an ice cream cone (#4). And so his mother tells him that all boys who eat ice cream cones some day grow up into a big ugly monster and she shows him this thing (#5). And right off the bat, that's the only thing that comes into my head."

Record Analysis:

Object #6 is directly perceived as the mother figure. He calls it "the figure of a woman" and perceives it as a "mermaid." He speaks of its "sloping silhouette like a woman that's kinda graceful, nice curves," and likens it to a "picture that has a woman as sort of the trunk of a willow tree." He gives it the title, "Venus, the Second" and makes it the "beautiful lady" in his non-directive story and the mother in his directive story.

Object #3 is definitely a dependency figure. The subject perceives it as a "baby angel." It also represents to him "a very little ghost," "Casper the ghost" to be specific, Casper being a cartoon character of a "little mischievous fellow." He entitles the object "Casper," makes it the protagonist of his non-directive story in which he refers to it as "little Casper" and he gives it the role of a male child in the directive story. It is a male dependency figure with which he identifies.

Object #2 appears to be a male figure. He perceives in it "a giraffe" to which he refers by the masculine pronoun in stating, "looks like he's got longish sort of legs." The percept of a "prehistoric monster— maybe a dinosaur," is also regarded as a male object-representation. Object #2 is the father in the directive story and the "mountain peak" in the non-directive story, both masculine figures. He regards this male figure as "a lonely spectre sticking out from the regular range" and this would suggest his identification with this lonely, male representation and the symbolization of his status as a blind person in a seeing world.

One might be led to believe that his sole reason for rejecting Object #4 is his stated one, "It's so plain," were it not for the fact that he likes Object #3 "because that is so simple." There is more than simple rejection of the object in his omission of Object #4 from his non-directive story. In his story he concludes the tale by saying, "using this last one here (#2)" thereby giving the impression that he believes he has used all of the objects in his story construction. Yet Object #4 is missing. This is interpreted as evidence of blocking and leads one to believe that he has perceived it as a male part-object which he has had to reject as such. His act of contrasting the rejected qualities of Object #4 with those of Object #1, also a male symbol, strengthens the conviction that this is a phallic object to him. Finally, there is reason to believe that the ice cream cone (#4) of his directive story is actually a symbolized phallus.

Object #1 is difficult for the subject, at first, because he cannot perceive an image in it. He says, "It doesn't seem to have any significance." His failure to perceive an image in such a complex specimen is again regarded as blocking. Its rough contour, eventually, makes him think of "some kind of growth under the sea." This concept of roughness, combined with the idea of "these odd looking eerie heads—like a wild animal's head," lead one to believe that he perceives maleness and conflict in the object. It is a frustrating object, an obstacle, in his non-directive story and it stands between him and the attainment of his goal of seeing the beautiful lady. It is omitted from his directive story. One suspects that this, alone with Object #4, symbolizes both sexual frustration as well as an unresolved Oepidal conflict.

Object #5 is, indeed, an important object in this record. It is the subject's first choice of which he says, "I just like it." Yet it is "one of these Grecian monsters that looks like it's got numerous heads." In his non-directive story it is a "monster" that "might frighten him terrifically" and that obstructs his travels in search of the beautiful lady. In the directive story it is also "a big ugly monster" used as a horrible example of what happens to little boys who eat ice cream cones. His strange title, "Avogadro," makes sense when one learns that he is having trouble in a science course he is now taking. At first glance, it would appear to be a male representation since it obstructs his search for the mother and also symbolizes the adult into which the little boy might grow in the directive story. There is reason to believe, however, that this is principally a female representation. Its roundness and smoothness are perceived in its resemblance to "these Walt Disney kind of toys . . . made out of plastic," and in the percept of a "rabbit" with "sloping ears." The "fountain with these three different things having faucets coming out of them," appears to be a breast symbol. One also finds this "fountain" percept in Object #6, a well identified female object. It is probably the 'bad mother' of whom he says, "She hollers a lot but she's not really mad at me."

The first three objects of his sequence are accepted. Object #2 engenders feelings of ambivalence. Objects #1 and #4 are rejected.

Psychodiagnostically, the important finding in this record is the use of the 'moral defense' as part of the delinquent reaction type. With an understanding of this defense mechanism, one begins to realize why this subject has made the 'bad' Object #5 his first choice. Whether it be 'bad mother' or 'bad father' (and it is probably both), its acceptance suggests the use of the 'moral defense.' The subject has, in this act of choice, shown that he has taken upon himself the burden of badness which appeared to reside in his objects in an effort to make them 'good.' This interpretation is confirmed by the clinical observation and the subject's own admission of his rebellious spirit.

One may perceive the dynamics of his personality reaction in his attitude towards the mother-figure. Here is a mother-fixated young man in search of the good mother. Next to the 'bad object' required by his 'moral defense,' his preferred object is unquestionably the mother symbol (#6). His striving to achieve reunion with her is clearly indicated in the non-directive story. His failure to gain this end is due, in part, to a confused Oedipal situation. His natural father and his mother were divorced when he was 6. He recalls this father as a man who drank heavily and who liked to argue but couldn't carry on a sensible conversation. His mother remarried when he was 9 and of his adoptive father he says, "He was one of the best men I've ever known. I respect him a lot." Here, then, were two fathers; the first, a bad one; the second, a kind one.

The subject's own lack of maturity is seen in his identification with the dependency object (#3). It is a male representation bearing the name of Casper; it is an accepted object, "a mischievous little fellow" whose rebellious personality is identical with that of the subject; it is a searcher for the beautiful lady.

The 'bad' father is seen in his reaction to Object #2, #1 and #4. Towards the first of these there is ambivalence: the latter two are fully rejected. Apparently he sees something 'good' in Object #2 along with the concept of the unaccepted father. There is some identification with it in his percept, "a kind of lonely spectre sticking out from the regular range." As a heterosexual, he would need some sort of identification with the male figure, one which he was able to gain in his relations with his adoptive father. But even this good man remained a rival for mother's affection, hence the ambivalence.

His real hostility towards the father figure comes out in his reaction towards objects which convey the idea of "roughness" without the ameliorating factor of "dependability." Object #1 is just such an object and so finds itself in fifth place in his sequence. Object #4, already mentioned as a phallic object, is the "ice cream cone" of his directive story. In this story it is probably a symbol of fellatio. Little boys who eat (i.e. suck) them grow up to be monsters (i.e. homosexuals).

He lost his sight at the age of 11 following an accident. Regarding his attitude towards his blindness, his test performance belies his statement, "I can't see. No use crying about it. The only things I miss are being able to read and drive." This seems to be a rationalization when one considers some of his statements made in the record. In the non-directive story, the subject is striving to get to the pretty lady. "He's *looking* for her:" he climbs a mountain "that he's supposed to be able *to see* the beautiful Venus from." At the end of the story, "all *he can see* is plain—a thin sort of mountain there." So he never gets *to see* the mother-figure for whom he strives. Again, as one reviews the numerous uses of the words "look" and "see," one is impressed with his lack of acceptance of his blindness, an acceptance that he tries to convince himself and the examiner that he has achieved.

Essentially, then, this record reveals two basic attributes of this subject's personality; the 'delinquent' object-relations technic and the strivings of a mother-fixated character. This interpretation is not meant to imply that he is to be considered clinically either as a psychopathic personality or an overt homosexual, but the tendency in these directions is there. The expression of rebellious wishes and the desire to unite with a loving female are both frustrated by his blindness and so, even though he insists that he has adjusted to the condition, it appears that he is rationalizing this acceptance of his blindness.

Discussion

Previous studies with sighted subjects (1, 2, 3) have already indicated the value of cypress knees as stimulus objects in a projective technic such as the KCK. The multiple testing situations afforded by these test objects, their capacity to lend themselves to an object-relations theoretical basis, their interrelating qualities, and many other of their unique attributes have been discussed in these previous reports. And now, in the present writing, the capacity of the KCK to elicit psychodiagnostic and psychodynamic information about the subject has once more been demonstrated.

It hardly seems necessary to review, at this time, the special qualities of the KCK that set it apart from other projective technics and support the claim that it represents a contribution to the field of projective testing. More significant, in a paper such as this, is the need to stress its unique applicability to the testing of blind subjects.

Following his initial experience with blind subjects, part of which goes to make up this report, it has become the writer's conviction that these subjects respond to the stimulus objects of the KCK as well as those who are able to see them. The fullness of the records and the meaningful responses contained in them show that the percepts gained by tactual exploration are practically identical with those formed through visual inspection of the stimulus objects.

Since no other projective technic is available for the testing of blind subjects, such a finding is, naturally, an important one. Davis (5) states, "There have been prior attempts to construct projective tests based on some types of form that can be explored tactually. However, these earlier efforts were not carried very far because either the experimenters themselves or others discouraged the work due to the feeling that there was a great deal of variability in the tactile discrimination of blind subjects." He goes on to say, "My personal opinion is that I question the validity of the assumptions upon which discouragement of efforts in these fields has been made." His reaction to an initial review of the author's experiences with the KCK applied to sighted subjects is, "I find it quite interesting and it certainly does seem to be a fresh and stimulating approach to the problem of projective testing of blind subjects."

Much more work will be required in validation studies with both sighted and blind subjects. This initial survey, however, suggests a promising future for the KCK in testing sightless individuals.

SUMMARY

A group of blind subjects was tested with the Kerman Cypress Knee Projective Technic (KCK). This test uses as its stimulus objects rubber replicas of six original cypress knees.

The complete record of one of the subjects who was tested is presented in this report. The fullness of this record and the meaningful responses contained in it shows that the percepts gained by tactual exploration are practically identical with those formed by sighted subjects through visual inspection of the stimulus objects.

The test is being presented as a potentially useful technic for the psychodiagnostic evaluation of the blind. Since validation studies are necessary, the author invites interested workers in the field of projective technics to join him.

REFERENCES

1. Kerman, E. F. Cypress knees: A new three-dimensional projective technic (KCK). Original method using unstructured stimuli. Preliminary report. *Psychia. Quart. Suppl.*, 1957, *31*, 1-10.

2. Kerman, E. F. Cypress knees and object-relations. Theoretical basis of a new three-dimensional projective technic (KCK). *Psychiat. Quart.*, 1958, *32*, 118-159.

3. Kerman, E. F. Psychodiagnosis and psychodynamics from an object-relations frame of reference. Application of the Kerman Cypress Knee Projective Technic (KCK). *Psychia. Quart.* (In Press).

4. Fairbairn, W. R. D. *An object-relations theory of the personality*. N.Y.: Basic Books, 1954.

5. Davis, D. J. Personal communication to the writer.

Received May 26, 1958
Revision received October 16, 1958

Blacky Test Scores Before and After Genito-Urinary Surgery[1]

JULIAN J. LASKY
VA Central NP Research Unit, Perry Point, Maryland
and
LESLIE BERGER
Staunton Clinic, University of Pittsburgh Medical School

The Blacky Pictures (4) a "modified projective technique" has been developed on the basis of psychoanalytic theory to measure personality variables. In this technique, there are 11 consecutive cartoons to portray either a stage of psychosexual development or a type of object relationship within the development. Through the years, considerable evidence has accumulated regarding the construct validity of the technique (6). With the exception of Charen's article (8), there are no published data (2) on test-retest studies of the Blacky Pictures. As Blum (7) has pointed out, Charen overgeneralized his findings. Charen did not use the technique according to standard instructions (4) and as a result failed to take advantage of data tapped at various levels (5).

In the present study, the effects of genito-urinary surgery, on Blacky Pictures' performance, will be explored.

The test was given to 30 male urological patients soon after their admission to the hospital. The patients' median age was 48 years and ranged from 20 through 67 years. On the average retesting was carried out 13 days after the first test, and six days following surgery.

The operations were as follows: prostatectomy — 8, orchiectomy — 8, cystoscopy — 8, nephrectomy — 3, and one each, circumcision, dilitation, and excision of verruca.

The protocols were scored (5) by the authors and the scoring based on a random sample was verified by the test author.

RESULTS AND DISCUSSION

The effects of the surgery on the dichotomized individual Blacky Picture dimension was determined by the phi coefficient. Pearson r's were computed for the Blacky patterns of conflict since these patterns yielded continuous scores.

TABLE I—Blacky Dimensional Scores: First Versus Second Administration

Blacky	Picture Dimension	Phi Coeff.	P
I	Oral Eroticism	.36	N.S.
II	Oral Sadism	.76	.005
III	Anal Expulsiveness	.74	.005
III	Anal Retentiveness	.18	N.S.
IV	Oedipal Intensity	.52	.01
V	Masturbation Guilt	—.17	N.S.
VI	Castration Anxiety	.17	N.S.
VII	Identification Process	.52	.01
VIII	Sibling Rivalry	.25	N.S.
IX	Guilt Feelings	.41	.05
X	Ego Ideal	.27	N.S.
XI	Narcissistic Love-Object	.12	N.S.
XI	Anaclitic Love-Object	.53	.01

TABLE II—Blacky Patterns of Conflict:
First Versus Second Administration

Conflict	Pearson r	P
Confused Sex Role	.66	.01
General Hostility	.55	.01
Disgruntled Dependency	.58	.01
Impulse Inhibition	.66	.01

An inspection of Table I indicates that six of the 13 individual dimensions yielded coefficients significant at the .05 level of significance. All four of the Blacky patterns of conflict coefficients in Table II were significant at the .01 level.

The three least stable dimensions

---

[1] The authors are indebted to Dr. G. S. Blum, University of Michigan, for assistance on scoring and for reading the manuscript, and to Dr. J. Caputo, Chief, GU Service and his staff at the Dearborn Veterans Administration Hospital for their fine cooperation.

were: V-Masturbation Guilt, VI-Castration Anxiety, and XI N-Narcissistic Love-Object. These are the same dimensions that one would expect to be affected most by surgery performed on the genitalia. III R-Anal Retentiveness, VIII-Sibling Rivalry, X-Ego Ideal, and I-Oral Eroticism were the other dimensions that appeared to be affected. Of these dimensions, I-Oral Eroticism most likely was affected by the hospitalization which satisfied oral dependency than the surgery. II-Oral Sadism, III E-Anal Expulsiveness, IV-Oedipal Intensity. VII-Identification Process, IX Guilt Feelings, and XI A-Anaclitic Love-Object were the least affected individual Blacky Picture dimensions.

The four Blacky Conflict patterns were relatively unaffected by the hospitalization and genito-urinary surgery. This is not too surprising, when we consider that these conflict patterns measure more generalized than specific personality characteristics.

SUMMARY

This study was designed to explore the effects of genito-urinary surgery on the Blacky Pictures' scores. Blacky test records of 30 male urological patients who were tested on admission to a VA hospital and who were retested about 13 days later, six days following surgery, were analyzed. Seven of the 13 individual Blacky dimensions were considerably affected. Six of the 13 individual Blacky dimensions, and all four of the Blacky patterns of conflicts still yielded statistically significant coefficients after the surgery.

REFERENCES

1. American Psychological Association. Technical recommendations for psychological tests and diagnostic techniques. *Psychol. Bull. Suppl.*, 1954, *51*, No. 2, Part 2, p. 28.

2. Berger, L. Interrelationships of autonomic and personality variables. Unpublished doctoral dissertation, University of Michigan, 1957.

3. Blum, G. S. A study of the psychoanalytic theory of sexual development. *Genet. Psychol. Monogr.*, 1949, *39*, 3-102.

4. Blum, G. S. *The Blacky Pictures: a technique for the exploration of personality dynamics.* New York: Psychological Corp., 1950.

5. Blum, G. S. *Revised scoring systems for research use of the Blacky Pictures. Male form.* 1951 Mimeographed copies available from G. S. Blum, University of Michigan, Ann Arbor.

6. Blum, G. S., and Hunt, H. F. The validity of the Blacky Pictures. *Psychol. Bull.*, 1952, *49*, 238-250.

7. Blum, G. S. Reliability of the Blacky test. A reply to Charen. *J. consult. Psychol.*, 1956, *20*, 406.

8. Charen, S. Reliability of the Blacky test. *J. consult. Psychol.*, 1956, *20*, 16.

Received June 9, 1958

Visual and Vocal Presentation of TAT Descriptions

DELL LEBO[1] AND P. JAMES SHERRY
Richmond Professional Institute

In 1955 Newbigging (15) published a report concerning London college students who rated 10 Thematic Apperception Test (TAT) cards on a happiness-sad scale. That same year an article by Lebo (11) appeared involving college students in Florida who ranked all the cards for adults on a like-dislike scale. When Newbigging's ranks were correlated with the identical cards from Lebo's study, a *rho* of .92 resulted. This comparison suggested that different experiments, with different experimenters and subjects from different lands, produced results in close agreement. The implication was obvious: subjects responded to the same TAT cards in a similar manner.

It was further noticed by Lebo that those pictures which were disliked were the same cards whose descriptions in Murray's manual (14) contained disquieting elements. This observation suggested that perhaps the original descriptions of the TAT cards contained approximately the same stimulus value as did the cards themselves.

Lebo and Harrigan (13) investigated the accuracy of this observation by comparing the stories given to the TAT series for adult females with the responses given by the same women to Murray's descriptions. It was found that the protocols collected under both sets of stimuli were similar.

If descriptions could be substituted for the pictorial stimuli, several problems might be approached by the use of a Verbal TAT (VTAT). A VTAT could be used for groups with different cultural backgrounds. Thompson (19), for instance, has raised the question of the TAT's applicability to people of diverse racial backgrounds living in a predominently white culture. One answer to such a question, not considered by Riess *et al.* (16) in their critique of assumptions underlying the Negro TAT, would seem to be the presentation of card decriptions, instead of scenes. Intracultural testing might be facilitated as it would be easier to translate (if necessary) VTAT descriptions than to redraw TAT pictures. Some of the difficulties encountered in redrawing the plates should be apparent from illustrations of thematic apperception techniques used on different groups (10).

Another problem in need of solution is the collection of normative data. Many investigators feel that without normative data it is difficult to judge whether a particular response is really or only apparently deviant. Heretofore, methods of collecting normative data have been unsatisfactory. Several persons have shared the same card, encouraging interaction; or the cards have been projected onto a screen, usually necessitating a limited exposure and frequently forcing subjects to view the stimuli from different distances and perspectives. The VTAT, especially in written form, would seem to be excellent for group administration.

The VTAT, in spoken form, would also seem to have excellent promise as a projective test for blind persons. At present the number of dynamic approaches to such people is severely limited.

Thus, there is apparent a need for two types of VTAT, a visual (ViTAT) and a vocal (VoTAT) form. Such forms could be administered individually. Or, the ViTAT could be printed in booklets and the VoTAT recorded for more complete uniformity and ease of administration in group testing.

While there is a need for VTAT's

---

[1] Now at Child Guidance and Speech Correction Clinic, Jacksonville.

there is also a need for caution, for, it is known that different projective stimuli elicit divergent patterns of verbal behavior from the same individual (3, 8). While it is not known whether the visual and vocal presentation of the same verbal message would provoke different patterns of verbal response, the implication is obvious. It may.

Lebo and Harrigan (13) have demonstrated that protocols yielded in response to the TAT and a VoTAT are more alike than unlike. They did not, however, investigate a ViTAT. The necessity of such a comparison provided the *raison d'etre* for the present experiment.

PROCEDURE

For purposes of investigation, it was hypothesized that responses to visual and vocal presentations of TAT card descriptions would be similar. The VTAT employed consisted of the descriptions of cards for adult females appearing in the TAT manual (14). VoTAT descriptions were read twice with a slight pause between readings. ViTAT descriptions were typed on standard 8½x11 sheets of paper. Subjects were given one ViTAT sheet at a time in a fashion similar to the usual procedure of TAT examination. As in standard procedure all subjects spoke their stories aloud.

Certain changes in TAT descriptions had to be made for clarity or to heighten ambiguity. Thus, in descriptions 14 and 20 the words "man (or woman)" were changed to "person." Special instructions for stimulus 16, the blank card, were also necessary. The model for administrative instructions was taken from Stein's manual (17) but was altered in accordance with the circumstances of the present investigation. For example, VoTAT 16, was, "This time I should like you to imagine a scene, describe it to me, and then tell me a story about it as you have done for the other descriptions."

The order of presenting the descriptions was varied so that ViTAT and VoTAT stimuli were interchanged among the subjects and among the description numbers as well. In no case were the descriptions of the more imaginative second series, 11-20, intermixed with those of the first, 1-10. These precautions were taken to control the possible influence a particular method of presentation might have on a response, to minimize fatigue effects, and to avoid suspected deleterious effects of mixing the series (11).

Subjects. A VTAT was individually administered to 40 college woman between the ages of 18 and 20 years. They had no psychology course beyond an introductory level. Other investigators have shown that no differences exist between the themes and range of content of college students and other nonhospitalized groups (4, 5, 9).

Evaluation. To compare responses to ViTAT and VoTAT presentations several objective methods were employed. They were, tabulations of words and ideas, scalings of emotional tone of stories, outcomes (7), and response levels (18), and categorizations of dynamic contents (1), perceptual ranges (2), and common themes (6). These categories have been fully described with illustrative scoring procedures and will be available by means of interlibrary loan (12).

Normative data (6, 7, 18) were also employed to help determine the degree to which VTAT protocols varied from TAT responses.

Statistics. Lebo and Harrigan (13) analyzing similar data, found the results of median tests congruent with analysis of variance evaluations. Since the nonparametric median test is increasingly preferred in handling data from projective tests, it was employed as the chief statistical tool in the present experiment.

RESULTS

The median test findings are presented in Table I. As can be seen, a

TABLE I—Median Test for Significant Differences Between Responses to Visual and Vocal Stimuli

Method	ViTAT Mdn.	VoTAT Mdn.	x^2
Words	80.00	71.50	1.53
Ideas	10.50	8.30	2.51
Story	—1.00	—1.00	.36
Outcome	.00	.00	.14
Level	11.25	10.00	3.60
Content	1.00	1.00	.26
Range	2.80	2.44	1.66

significant difference between responses to ViTAT and VoTAT methods of presentation was found for none of the seven objective measures.

Table II depicts the rank order correlation between ViTAT and VoTAT stimuli and, at the same time, compares the VTAT methods to normative TAT data. Examination reveals that the mood or tone of the story was significantly correlated no matter which VTAT presentation was used. Both methods were also significantly correlated with protocols from the TAT itself. Story outcome, however, is another matter. No significant *rhos* were obtained. This finding was not surprising since the mood of the outcome of a story frequently differs, or even negates, the mood of the story itself.

TABLE II—Rank Order Correlations of VTAT Presentations with Each Other and with Normative Data

	ViTAT: VoTAT	ViTAT: Norm	VoTAT: Norm
Story mood	.73**	.58*	.81**
Outcome mood	.44	.21	.41
Level of response	.40	.42	.43
Common themes[a]	.74**	.28**	.52**
Perceptual range	.38		
Dynamic content	.67**		
Word count	.67**		
Idea count	.42		

[a] r, df=108 (12).
* Significant at .05 level.
** Significant at .01 level.

Level of response similarly was found to be nonsignificantly correlated. An r on the category of common themes was significant at the .01 level in all these comparisons. A Pearson product moment correlation was employed because only categories having a normative percentage frequency of 10 or more were used in the present study. Hence, although there were 110 categories, the number of themes for different TAT stimuli varied from two to 10. *Rho* might have led to spurious relationships or lack of relationships.

Of the remaining measures, for which no satisfactory normative data could be found, two categories were nonsignificant and two achieved significance. Dynamic content and word count both correlated .67. This figure was significant at the .01 level.

Reliability. The median per cent of agreement between two judges' ratings of 10 per cent of the data, selected on the basis of a table of random numbers, was 90. Their percentage of agreement ranged from 80, for dynamic content, to 98 for word count, the most objective measure. Correlation coefficients ranged from .89 to 1.0; all were significant at the .01 level of confidence.

Consideration of these results indicated that while the measures employed were reliable, they did no more than partially substantiate the hypothesis.

DISCUSSION

The present investigation revealed that the ViTAT and VoTAT methods of presentation were neither alike nor unlike. The data of Table II showed that of the eight measures employed four were significantly correlated and four did not achieve significance. Inspection of Table I, however, revealed that none of the seven measures considered in that table was significantly different when VTAT presentation was varied.

It must be noted, however, that in every case where the ViTAT and VoTAT were not significantly correlated that the ViTAT was the superior method. More ideas were forthcoming, a greater range of responses was produced, more positive scores were achieved in tone of outcome, more complex stories were told, to the ViTAT than to the VoTAT. Similarly, although differences between the two methods were nonsignificant, in every case the ViTAT median was equal or superior to the VoTAT median.

Lebo and Harrigan (13) indicated that presentation of card descriptions by reading them to subjects (VoTAT) was as good, if not better, than the TAT itself insofar as responses were concerned. The present investigation would seem to suggest that a visual method is even superior to the spoken manner.

The findings of the present study are limited. Caution is essential. Firstly, subjects of the present study were college students who, presumably, were highly responsive to the written word. A different kind of sample might yield very different results. Secondly, the subjects were never in contact with the TAT plates during the experiment. Lebo and Harrigan's study exposed them to the plates for more than half the response time. The presence of such stimuli may have produced more comparable responses between the cards and spoken card descriptions. Had the subjects of the present study responded to the TAT alternately with the ViTAT, the ViTAT excess might not have been so apparent.

In any event, there seems to be sufficient evidence to warrant further investigations of a ViTAT. Such a method, when completely feasible, would be an approach to the problem of group administration, the collection of massive normative data, and intracultural testing. Before such usage is considered, however, study should be directed towards making the descriptions more like the cards. In certain cases the TAT appears to possess stimulus properties not evident in the VTAT. Comparisons on the basis of individual descriptions and plates are necessary.

Further research is underway to investigate such considerations and should be made available in the literature from time to time.

SUMMARY

TAT card descriptions were individually presented to 40 college girls between the ages of 18-20 years. Half the descriptions were given to the subjects to read (ViTAT) and half were read to them (VoTAT). It was hypothesized that responses to both methods would be equivalent. Nonparametric statistics used with objective measures of story mood, common themes, dynamic content, word counts, idea counts, perceptual range, level of responses, and outcome moods neither substantiated nor rejected the hypothesis. For the first four measures were significantly correlated while the last four did not achieve significance. A median test, however, yielded no significant difference between any of the measures.

Actually, the ViTAT was found to be superior to the VoTAT according to the measures used. Both methods seemed promising for group administration, the collection of normative data under controlled conditions, and in intracultural testing. Despite this promise several cautionary aspects of the present investigation were pointed out. The need for additional research was stressed and several of the plans now in process were advanced.

This investigation is one of a series of interrelated studies, two of which (11, 13) have been reported previously. Others should become available as they are completed.

REFERENCES

1. Aron, Betty. *A manual for analysis of the Thematic Apperception Test*. California: Willis E. Berg, 1949.

2. Dana, R. H. A manual of objective TAT scoring. Unpublished manuscript (mimeographed). Part of this material is more generally available as ADI No. 4743, 1955.

3. Dorken, H. Jr. Projective techniques and the consistency of the personality structure. *J. abnorm. soc. Psychol.*, 1953, *48*, 525-531.

4. Eron, L. D. Frequencies of themes and identifications in the stories of schizophrenic patients and non-hospitalized college students. *J. consult. Psychol.*, 1948, *12*, 387-395.

5. Eron, L. D. A normative study of the Thematic Apperception Test. *Psychol. Monogr.*, 1950, *64*, No. 9 (Whole No. 315).

6. Eron, L. D. Responses of women to the Thematic Apperception Test. *J. consult. Psychol.*, 1953, *17*, 269-282.

7. Eron, L. D., Terry, Dorothy, & Callahan, R. The use of rating scales for emotional tone of TAT stories. *J. consult. Psychol.*, 1950, *14*, 473-478.

8. Gottschalk, L. A., & Hambridge, G. Jr. Verbal behavior analysis: A systematic approach to the problem of quantifying psychologic processes. *J. proj. Tech.*, 1955, *19*, 387-409.

9. Henry, W. E. The thematic apperception technique in the study of culture-personality relations. *Genet. Psychol. Monogr.*, 1947, *35*, 3-135.

10. Henry, W. E. The thematic apperception technique in the study of group and cultural problems. In H. H. Anderson & Gladys L. Anderson (Eds.), *An introduction to projective techniques*. New York: Prentice-Hall, 1951. Pp. 230-278.

11. Lebo, D. Immediate affective reaction to TAT cards. *J. clin. Psychol.*, 1955, *11*, 297-299.

12. Lebo, D. Scoring the verbal TAT, with illustrative protocols. In P. J. Sherry, A comparison of the responses to written and spoken TAT card descriptions. Unpublished master's thesis, Richmond Prof. Inst., 1959.

13. Lebo, D. & Harrigan, Margaret. Visual and verbal presentation of TAT stimuli. *J. consult. Psychol.*, 1957, *21*, 339-342.

14. Murray, H. A. *Thematic Apperception Test manual*. Cambridge: Harvard Univer. Press, 1943.

15. Newbigging, P. L. Influence of a stimulus variable on stories told to certain TAT pictures. *Canad. J. Psychol.*, 1955, *9*, 195-206.

16. Riess, B. F., Schwartz, E. K., & Cottingham, Alice. An experimental critique of assumptions underlying the Negro version of the TAT. *J. abnorm. soc. Psychol.*, 1950, *45*, 700-709.

17. Stein, M. I. *The Thematic Apperception Test* (2nd ed.). Cambridge: Addison-Wesley, 1955.

18. Terry, Dorothy. The use of a rating scale of level of response in TAT stories. *J. abnorm. soc. Psychol.*, 1952, *47*, 507-511.

19. Thompson, C. E. The Thompson modification of the Thematic Apperception Test. *Ror. Res. Exch.*, 1949, *13*, 469-478.

Received August 11, 1958

Religion and the Defensive Responses in Children's Fantasy

GERALD S. LESSER
Hunter College

Many strong pleas (e.g., 2, 3, 11) have been made recently for the evaluation of avoidance variables as well as approach variables in the analysis of fantasy material. It is clear from either the viewpoint of psychoanalytic theory (emphasizing the concepts of drive and defense) or general behavior theory (stressing the concepts of approach and avoidance) that the application of conflict concepts to projective test analysis is inescapable. The rationale for the use of a conflict theory in the empirical evaluation of projective techniques is so convincing that only formidable obstacles could have delayed its implementation.

Perhaps the most formidable difficulties in applying conflict theory to the empirical assessment of projective responses are measurement problems. One of the crucial measurement questions is whether or not fantasy material can yield independent measures of strength of approach tendency and strength of avoidance tendency. The objection to the derivation of separate, independent measures is based upon the position that a fantasy response, like any other response, is itself a resultant of the interaction of approach and avoidance vectors, and the independent strengths of approach and avoidance can not be separated through the sole consideration of this single response.

Although a variety of valuable suggestions has been made (e.g., 1, 4) for the eventual experimental solution of the problem of determination of the independent strengths of drive and control, certain studies (e.g., 6, 8, 9, 10) have proceeded upon the assumption that both need strength and anxiety strength can be separately estimated from fantasy productions. This supposition holds that fantasy material is composed of different (yet overlapping) behavioral units, certain of which are pertinent to the strength of approach tendencies and others relevant to the strength of avoidance tendencies. The studies noted above which have operated within this framework in measuring need and inhibition variables have all yielded promising results.

One report (6) presents a detailed scheme for measuring aggression-anxiety in fantasy as well as aggression in fantasy and overt aggression. The present study relates these measures to the religious affiliations of children. The importance of the association of religion and aggression for this study is that evidence of the relationships between religion and the fantasy aggression-anxiety measures would provide evidence for the construct validity and usefulness of the aggression-anxiety measures.

There has been increasing interest in the effects of sociocultural differences in socialization attitudes and practices (e.g., 12). Although the influence upon children of one such sociocultural variable, religious training, has not been systematically studied, it may be assumed that different religious groups hold and practice different views concerning the socialization of aggression which would be reflected in the aggression or aggression-anxiety of the children. At least one earlier study (7) reports a relationship between religious background and the aggressive behavior of children. While religious affiliation undoubtedly represents a multidimensional variable, the present study assumes sufficient uniformity of socialization within religious groups and sufficient differences among religious groups to allow the evaluation of the effects of religious background upon aggression variables.

METHODS

The *Ss* were 63 white boys (ages 10-0 to 13-4) drawn from two fifth-grade and two sixth-grade classes in three public schools in New Haven, Connecticut[1]. The Kuhlmann-Anderson intelligence quotients of these boys ranged from 78 to 125, with a mean of 103. The three schools are in adjacent districts and the families constitute a relatively homogeneous upper lower-class group.

Religious affiliation was determined in three of the four classes (44 *Ss*) during an interview with the mother of each boy. In the fourth class (19 *Ss*), religion was determined through school records checked against the statements of the classroom teacher who had taught in the school for many years and who was well-acquainted with the families of each of her students. In the four classes, nineteen boys were Catholic, thirty-six were Jewish, and eight were Protestant.

Fantasy-aggression and fantasy aggression-anxiety were measured through an adaptation of the standard TAT procedure. The set of ten pictures used and the rationale behind the procedure employed are described in detail elsewhere (5, 6).

A fantasy-aggression score was derived for each *S* by counting the number of times the following acts appeared in his stories: fighting, injuring, killing, attacking, assaulting, torturing, bullying, hating, breaking, smashing, destroying, scorning, expressing contempt, expressing disdain, cursing, swearing, threatening, insulting, belittling, repudiating, ridiculing. Only the first such aggressive act in each story was scored. All counter-aggressive or punishing aggressive acts were scored in the aggression-anxiety categories which follow.

Five fantasy aggression-anxiety scores were obtained for each *S*. The fantasy aggression-anxiety scores were arranged along a chronological sequence in which the aggression-anxiety indication intervenes (I) after instigation to aggression is reported, but before the fantasy-aggression act is begun, (II) after the instigation to aggression is reported and after the fantasy-aggression act is begun, but before the fantasy-aggression act is completed, and (III) after the fantasy-aggression act is completed. The fourth category included themes of psychological distance, which appear to function to maintain psychological separation between the *S* and the story he tells. These themes may appear at any point in the hypothetical chronological sequence. The fifth aggression-anxiety score represents the total frequency of the *S*'s responses in the four preceding aggression-anxiety categories combined. A full listing of the fantasy aggression-anxiety categories and specific rules for scoring are presented elsewhere (6).

To measure overt aggression, a modified sociometric device, the "Guess Who" technique was adopted. It consists of a booklet containing a series of written descriptions of children. The *Ss* were asked to identify each of these descriptive characterizations by naming one or more classmates. Fifteen overt aggression items were used. The following item is illustrative: "Here is someone who is always looking for a fight." A diversity of aggressive behaviors were included; items depicted verbal, unprovoked physical, provoked physical, outburst, and indirect forms of aggressive behavior. An overt aggression score was obtained for each *S* by counting the number of times his name was noted by his classmates. This procedure is also described in detail elsewhere (6).

RESULTS

Table I presents the means and

---

[1] The writer wishes to thank Miss Esther Viets, Dr. J. Allen Hickerson, Miss May White, Mr. John Wesolowski, Miss Margaret Fitsimons, and the teachers of Barnard, Scranton, and Roger Sherman schools in New Haven, Connecticut, for their helpful cooperation.

TABLE I—Means, Standard Deviations, and Mann-Whitney *U* Tests of the Aggression Scores for Catholic, Jewish, and Protestant Boys

	Catholic (N=19)		Jewish (N=36)		Protestant (N=8)		*U* Catholic vs. Jewish	*U* Catholic vs. Protestant
	M	SD	M	SD	M	SD		
Overt Aggression:	49.1	10.7	50.3	11.0	50.5	10.8	--	--
Fantasy Aggression:	5.4	2.4	5.1	2.6	5.0	2.1	--	--
Aggression Anxiety:								
I. Anxiety Prevents Aggression	4.8	5.1	4.2	2.6	3.1	1.4	--	--
II. Anxiety Interrupts Aggression	5.8	3.3	3.8	3.1	3.8	1.8	2.78**	--
III. Anxiety Follows Aggression	6.8	3.5	4.7	3.7	3.8	1.8	2.35*	2.29*
IV. Psychological Distance	2.1	2.8	1.6	2.3	3.3	4.3	--	--
V. Total Anxiety	19.7	9.0	14.3	7.6	13.9	5.5	2.51*	--
I. %	24.1	12.2	34.0	17.1	30.4	20.9	2.33*	--

*, ** $p < .05, .01$, respectively (two-tailed test)

standard deviations for Catholic, Jewish, and Protestant boys of the overt aggression measure, the fantasy-aggression measure, and six fantasy aggression-anxiety measures. The first five aggression-anxiety measures correspond to those described in the Methods section; the sixth score (I%) represents the degree to which the *S* responds predominantly with anxiety reactions which intervene early rather than late in the sequence from recognition of instigation to aggression to the aggressive act itself. This score represents the ratio of aggression-anxiety category I scores to the total aggression-anxiety score (excluding "psychological distance") and indicates the comparative frequency of the aggression-anxiety responses which prevent aggression (I) in contrast to the aggression-anxiety responses which interrupt or follow the aggressive act (II and III).

Because the measures obtained in this study did not in all instances meet the conditions for a parametric test of the differences among religious groups (i.e., normally distributed populations, equal or known ratio of variances, interval scaling, etc.), the nonparametric Mann-Whitney *U* test was applied. These results are also presented in Table I. Although the small number of Protestant boys (N=8) precluded obtaining consistent results for this group, the comparisons between Catholic and Protestant boys are presented. There were no significant differences between Jewish and Protestant boys and these comparisons are not tabulated in Table I.

The results indicate that, while there are non-significant differences among religious groups for the overt aggression and fantasy-aggression measures, there are significant differences in the use of anxiety or inhibition responses in fantasy. The Catholic boys in this study employ a significantly greater number of aggression-anxiety responses which interrupt aggression (II) than Jewish boys. Catholic boys use a significantly greater number of aggression-anxiety responses which follow aggression (III) than both Jewish and Protestant boys, and also show a slightly greater number of aggression-anxiety responses which prevent aggression (I). Thus, Catholic boys manifest a significantly greater number of responses in total anxiety (V) than Jewish boys and this comparison of total anxiety responses between Catholic and Protestant boys approaches significance ($U = 1.81$, $p < .10$).

However, the Catholic boys in this study use *proportionally* fewer early-appearing controls than do Jewish (and Protestant) boys. Thus, the scores (I%) of the ratio of early-appearing controls (I) to late-appearing controls (II and III) are significantly lower for Catholic boys than for Jewish boys. Catholics employ more defensive inhibitions in fantasy, but proportionally use fewer aggression-anxiety responses which appear early in fantasy and prevent aggression than aggression-anxiety responses which appear later and interrupt or follow aggression.

DISCUSSION

This study has obtained significant differences in fantasy aggression-anxiety responses among boys of different religious groups despite the obvious weakness of religion as a unitary, scientific variable. The evident multidimensional character of religious affiliation would appear to demand knowledge of its many components before religion can be used scientifically as a variable. We have obtained only the mothers' statements of the religious affiliation of her family and did not obtain data concerning the degree of intensity of commitment, conviction, and actual practice of religious tenets held by parents or child.

In addition to the limitations of employing religion as a variable, there is little empirical basis in research for the central assumption of this study that there is sufficient uniformity of socialization practices within religious groups and sufficient differences in socialization practices among religious groups to permit the assessment of differential effects upon aggression variables.

Despite these qualifications, significant regularities are reported in differences in the fantasy aggression-anxiety measures for different religious groups. These results may be added to the findings of a previous study (6), in which fantasy aggression-anxiety measures combined with fantasy-aggression measures to predict overt aggression, to indicate the construct validity and sensitivity of the proposed measures of fantasy aggression-anxiety. The arguments for the analysis of defenses and controls in fantasy have a clear theoretical foundation; the establishment of a measure of anxiety in fantasy makes feasible the empirical assessment of the conflict analysis of projective tests.

The substantive results of this study indicate that the socialization practices encountered by Catholic boys tend to create conditions for the comparatively greater development of defensive avoidance of aggression in fantasy. The avoidance tendencies of the Catholic boys, however, are of a special character. Catholic boys rely primarily upon inhibitions which follow aggression (e.g., aggressive act is punished by parents, teacher, or police) and inhibitions which interrupt aggression (e.g., aggressive act is stopped short of completion by parents, teacher, or police) rather than upon defenses which intervene immediately upon recognition of instigation to aggression and prevent aggression (e.g., instigation to aggression met with cooperation, tactful comments).

SUMMARY

In the studies aimed at the objective evaluation of projective tests, strong theoretical arguments have been presented for the importance of assessing anxiety and regulative forces as well as impulses and needs. This study reports differences among preadolescent boys in different religious groups in the frequency with which fantasy aggression-anxiety responses are made.

Catholic boys manifest a significantly greater number of aggression-anxiety responses in fantasy than Jewish (and Protestant) boys. Specific sub-categories of aggression-anxiety behavior are analyzed. The responses of Catholic boys significantly exceed those of Jewish boys for the category in which aggression-anxiety interrupts aggression in fantasy, and significantly

exceed the responses of both Jewish and Protestant boys for the category in which aggression-anxiety follows aggression in fantasy. Catholic boys rely significantly less, proportional to total defense used, upon the aggression-anxiety responses which intervene immediately after recognition of instigation to aggression and which prevent the aggressive act in fantasy.

REFERENCES

1. Atkinson, J. W. Exploration using imaginative thought to assess the strength of human motives. In M. R. Jones (Ed.) *Nebraska symposium on motivation*. Lincoln: Univer. Nebraska Press, 1954, 56-112.

2. Auld, F. Contributions of behavior theory to projective techniques. *J. proj. Tech.*, 1954, *18*, 421-427.

3. Bellak, L. A study of limitations and "failures": toward an ego-psychology of projective techniques. *J. proj. Tech.*, 1954, *18*, 279-293.

4. Klein, G. S. Need and regulation. In M. R. Jones (Ed.) *Nebraska symposium on motivation*. Lincoln: Univer. Nebraska Press, 1954, 224-274.

5. Lesser, G. S. The relationship between overt and fantasy aggression as a function of maternal response to aggression. *J. abnorm. soc. Psychol.*, 1957, *55*, 218-221.

6. Lesser, G. S. Conflict analysis of fantasy aggression. *J. Pers.*, 1958, *26*, 29-41.

7. Murphy, Lois B. *Social behavior and child personality*. New York: Columbia Univer. Press, 1937.

8. Mussen, P. H., and Naylor, H.K. The relationships between overt and fantasy aggression. *J. abnorm. soc. Psychol.*, 1954, *49*, 235-240.

9. Pittluck, Patricia. The relationship between aggressive fantasy and overt behavior. Unpublished doctor's dissertation, Yale Univer., 1950.

10. Purcell, K. The TAT and anti-social behavior. *J. consult. Psychol.*, 1956, *20*, 449-456.

11. Purcell, K. Some shortcomings of projective test validation. *J. abnorm. soc. Psychol.*, 1958, *57*, 115-118.

12. Whiting, J. W. M., and Child, I. L. *Child training and personality*. New Haven: Yale Univer. Press, 1953.

Received August 18, 1958

Rorschach Water Responses in Alcoholics: Levels of Content Analysis and Consensual Validation[1]

JOHN B. MARKS
Veterans Administration Hospital, American Lake, Washington

Various methods of Rorschach content analysis have little in common. One type, represented by the conventional scoring categories, would sum the number of responses with, say, geographic content and relate this sum to behavior or to implicit personality criteria. The categories are essentially commonsense, logical, and without any necessary relationship to what they predict in the patient. A second method, represented by the Hostile Content Scale of Storment and Finney (4) is not so much concerned with the logical classification of the content as in how the content as specifically expressed reveals a tendency toward some behavior of interest. Responses of various content are weighted as well as summed and the weighting is in terms of personal meaning rather than of logical categories. Still a third method, exemplified by Lindner (2) would see content as indicative of various forms of global personality organization. Thus various response contents can be thought of as signs of "oral character" and it might be possible to sum the content signs in a record to give something like an "oral character" score. Clinicians interpreting Rorschach content use all three methods but the relationship of conclusions derived from these methods to external criteria is nowise certain.

Shereshevski-Shere and Lasser (3) have not been able to repeat the earlier finding of Griffith and Dimmick (1) that alcoholics show more responses with water content than do various other classes of persons. Many Rorschach interpreters would find grounds for criticising the specific measures used in both studies. Thus, in tabulating water responses, "ice" or "snow" was given the same weight and meaning in the sum as was "the blue is water." "A crab" was given the same weight as a water animal as was "a jelly fish."

In order to test whether levels of "dynamic" interpretation might distinguish differently between alcoholics and others a study was designed to compare (a) a simple summing of water responses, (b) a scaled summing and (c) the sortings of judges based upon the verbatim responses with water content.

The Rorschachs used were those of patients at this V. A. neuropsychiatric hospital. Twenty-two persons having a primary diagnosis of alcoholism without psychosis were matched by age and education with twenty-two other non-psychotic patients without alcoholism or a history of drinking problems. Secondary diagnoses within the alcoholic group were balanced with the primary diagnoses within the non-alcoholic group. That is, there were approximately as many alcoholics with the secondary diagnoses of anxiety reaction or of conversion reaction as there were of non-alcoholics with these as primary diagnosis.

Water responses were defined as those with the following content:

(1) Clear water percepts, e. g. "lake," "gulf," "ocean."

(2) Landscapes with water, e. g. "beach".

(3) Reflection percepts if reflection is seen as in water.

(4) Water in motion, e. g. "waterfall."

---

[1] The author is indebted to Drs. W. Michael Adams, Beverly F. Davenport, Wilbert E. Fordyce, Warren K. Garlington, Samuel Goldenberg, William S. Kogan, Willard A. Mainord, Thomas P. McGehee, Robert D. Quinn, Irwin G. Sarason, and James C. Stauffacher, who kindly served as judges in this study.

(5) Water animals or plants.
(6) Other beverages.

The water response score was made simply by summing the number of such responses in each record.

In making a scaled score pooled judgments of clinicians were used to determine what weight to attach to different types of "water responses as indicators of alcoholic passivity." The final scale assigned a basic weight of *1* to percepts including still water: landscapes, reflections, lakes, and so on. Map percepts were given no weight nor were percepts of moving water. Soft, water animals, including molluscs and coral but not crustacea or fish, were given a basic weight of *1* as were percepts of water plants. Drinking fountains and beverages were also given a weight of *1*. An additional weight of *1* was given if a body of water were seen as enclosed and protected, e.g. "a harbor." Floating concepts, e.g. "floating seaweed," also received an additional weight of *1* and color-determined liquid concepts received an additional weight of *0.5*.

The judges' sorting was accomplished simply by presenting ten clinicians with verbatim water responses and inquiry extracted from each of the forty-four protocols. Responses occurring together on one protocol were identified as such. Without any instructions as to rationale, the judges were instructed to pick out 22 sets of responses which were those of the alcoholics.

The results are uniformly negative. The summed water responses (divided by total R for each subject) did not differentiate between alcoholic and non-alcoholic groups. The scaled scores differentiate no better. None of the ten judges sorted any better than chance.

These findings confirm the negative conclusions of Shereshevski-Shere and Lasser. They confirm it in a situation where more "dynamic" judgments were made about the meaning of the water responses than in the original simple counting studies.

One aspect of the judgments is deserving of comment. The number of times that each of the 44 sets of water responses was judged to have come from the protocol of an alcoholic can be computed. These possible "numbers of times judged alcoholic" can vary from zero to 10. The exact chance probability of the distribution of the 44 extracts of protocols over these 11 points, assuming that the judges are acting without any common basis for their sorting, can be computed from the binomial expansion. Comparing this predicted distribution with the observed (Table I) we find that the judges were not acting inconsistently nor with independent presuppositions. There is more than the expected agreement on which protocol extracts are judged alcoholic and conversely on which are judged non-alcoholic.

This suggests that clinicians have some reliably shared ways of behaving when confronted with this Rorschach task but that this reliability is not related in a valid way to the external criterion. It is difficult to estimate the intrapersonal assurances of the judges about their judgments but certainly there is consensual validation for the way that they judged. If they were only to consult their colleagues they would find a good bit of consensus for their decisions. But whatever assurance this consensus might give them would be seen as misplaced when the

Table I—Number of Protocols Receiving Various Numbers of Judgments as "Alcoholic"

Number of judgments	*0-2*	*3*	*4*	*5*	*6*	*7*	*8-10*
Observed frequency	15	2	5	4	1	3	14
Expected frequency	2.42	5.15	9.02	10.82	9.02	5.15	2.42

Chi Square=136.86
P=<.01

agreement with the external criterion is discovered to be non-existent.

SUMMARY

A comparison of alcoholic and non-alcoholic neuropsychiatric hospital patients in the water-content responses to the Rorschach was made. In addition to simple summing of water content responses, a scaled score based on dynamic considerations and clinicians' judgments of extracted water responses were used to differentiate the groups. None of the three methods successfully distinguished the groups. A high proportion of inter-judge agreement in the judgments points out the good possibility on projective testing of clinicians agreeing with each other reassuringly while they agree insignificantly with outside reality.

REFERENCES

1. Griffith, R. M. and Dimmick, G. B. Differentiating Rorschach responses of alcoholics. *Quart. J. Stud. Alcoh.*, 1949, *10*, 430-433.

2. Lindner, Robert M. Content analysis of the Rorschach protocol. In L. Abt and L. Bellak (Eds.), *Projective psychology*. New York: Knopf, 1950, pp. 75-90.

3. Shereshevski-Shere, E. and Lasser, L. M. An evaluation of water responses in the Rorschachs of alcoholics, *J. proj. Tech.*, 1952, *16*, 489-495.

4. Storment, C. T. and Finney, B. C. Projection and behavior: a Rorschach study of assaultive mental patients, *J. proj. Tech.* 1953, *17*, 349-360.

Received July 18, 1958

Children's Like and Dislike Drawings

CARL J. NITSCHE AND WILLIAM THOM
Childrens Service Center, Wilkes-Barre, Pennsylvania

This study attempted to explore further the value of children's drawings as a projective technique. It was hypothesized that freely chosen Likes and Dislikes in children's drawings would offer greater insight into their school adjustment, than would requests to draw specifics, like a man, a house, etc. A second point of interest was to determine what significant differences could be found between Likes and Dislikes.

Arrangements were made through the city schools to test all pupils in an elementary school. In its six grades were 76 boys and 64 girls, ranging in age from five years, eleven months to thirteen years, six months, with I.Q.'s from 80 to 136; the majority in the normal range. Pupils were tested three at a time in a separate class room. They were given plain paper 8½ x 11″ with a box of commercial colored pencils, and told to draw "something you like very much." On a second sheet they drew "something you don't like at all." After each grade was tested, its teacher was asked to rate her children's school adjustment on a 24 item scale with 4-valued answers. Ratings were summed for each child. The children in each grade were then ranked for school adjustment.

Like and Dislike drawings were scored separately for 1. initial time (from end of instruction until the child began to draw), 2. drawing time, 3. number of concepts drawn, 4. number of colors used, and 5. area of paper covered by drawings. The effect of seasons and holidays, and the teacher's influence were noted but not scored. On the basis of these scores, the children in each grade were ranked, and rhos were computed between school adjustment and the drawing variables, treating Likes and Dislikes separately.

The rhos ranged from −.55 to +.72, with many small values between −.18 and +.19. Except for Grade 2, they appear to be essentially at a chance level, with four of 46 significant at the 5% level. Four significant results for Grade 2 Likes (but none for Dislikes) appeared to reflect the stress placed on drawing by that teacher, rather than general factors.

Likes were compared with Dislikes by obtaining a *t* ratio for the standard error of the difference between means. Only in drawing time did the Likes differ from the Dislikes at the 5% level of confidence.

Several qualitative findings are of interest. The seasons, and especially approaching holidays like Christmas and Easter, influenced the content of the drawings markedly. Children in the first three grades, instead of abstracting, drew many objects, often using the entire page. They used many colors, especially green and blue. In the three upper grades children frequently drew one concept with one or two colors.

Received March 31, 1958
Revision received October 7, 1958

Identification with Same-Sex and Opposite-Sex Figures in Thematic Apperception[1]

A. B. SILVERSTEIN[2]
New York University

In interpreting the TAT and related techniques, it is sometimes assumed that the subject identifies himself more readily with figures that are similar to him in some way, for example with respect to sex, than with those that are unlike him. To validate this assumption, at least as far as sex is concerned, one would have to demonstrate relationships between the subject's behavior and the behavior of figures of the same sex as himself that do not hold in the case of figures of the opposite sex. The number of words that the subject uses in his various stories, and the amount of material beyond pure description that they contain, both of which have been used as measures of identification, are at best indirectly related to that concept, and may actually be quite irrelevant to it. McIntyre (5) appears to be the only investigator who has attempted to test the above assumption directly, focusing on similarity with respect to age and sex, but his findings are difficult to interpret, since the subjects seemed not to identify themselves with most of the figures that he used. In any case, McIntyre concluded that his results failed to support the hypothesis that similarity between the subject and the figures serves to encourage his identification with them. The study reported in the present paper represents another attempt to test this hypothesis.

PROCEDURE

The subjects were 80 college students divided on the basis of sex into groups of equal size, equated for age and college year. The average subject was a sophomore of about 20 years of age. A specially designed series of five pictures was employed, consisting of two parallel (male and female) sets of two pictures each, plus an additional picture showing a single figure of each sex. All the figures were of people of approximately the same age as the subjects. The test was administered by the group method, with each subject receiving a printed copy of the entire series of pictures, and a booklet in which to write his stories.

For the analysis of the thematic material, nine variables were selected from Murray's need system (6): Affiliation, Aggression, Autonomy, Deference, Dominance, Exhibition, Nurturance, Sex, and Succorance. For every story each of the nine needs was assigned two scores, to indicate the strength with which it was attributed to same-sex and opposite-sex figures in that story. These scores, which ranged from 0 to 4, were based on the number of figures of each sex to which the need was attributed, and on the amount of emphasis that the need received, either by repetition or elaboration. The subject's final scores for each need were the sums of the scores for that need throughout his series of stories.

When the Thematic Apperception Test had been completed, an abbreviated version of the Edwards Personal Preference Schedule (1) (EPPS) was administered. Like the scheme used in analyzing the thematic material, the EPPS is based on Murray's need system. In this study only those EPPS items were used that represented combinations of the nine needs listed above. The subject's score for each need was the total number of statements representing that need that the subject selected as characteristic of himself.

---

[1] Based on a doctoral dissertation for which Ralph W. Gilbert, Zygmunt A. Piotrowski, and Robert E. Silverman (Chairman) served as the thesis commission.

[2] Now at the Psychiatric Institute, University of Maryland.

RESULTS

To restate the problem in operational terms: Are there relationships between scores on the EPPS and scores on the thematic apperception test for same-sex figures that do not hold in the case of scores for opposite-sex figures? Two different approaches to this problem were taken in analyzing the data.

In the conventional R-technique approach employed first, product-moment correlations were calculated for each of the nine needs over the 40 subjects in each group. Of the 36 correlation coefficients obtained in this way, only three were significant at the .05 level (see Table I). Oddly enough, all of these involved scores for opposite-sex figures, although of course this may represent only a chance occurrence. Another somewhat unexpected finding was that two of the three significant correlations were negative. Only in the case of the one positive correlation, however, was the difference between the coefficients for the two types of figures significant at the .05 level, as determined by Hotelling's test (9). There is little evidence here to indicate that the subjects identified themselves with either type of figure, and almost none to show that they identified themselves more readily with same-sex figures than with opposite-sex figures.

In the second, "profile-similarity" approach to the problem, correlations were calculated over the nine needs for each of the 80 subjects. Of the 160 resulting correlation coefficients, only nine were significant at the .05 level or better (see Table II). There were just two cases in which the correlations for same-sex and opposite-sex figures differed significantly, and in one of these, the coefficient involving scores for opposite-sex figures was higher. Again, these findings do not suggest that the subjects identified themselves more readily with same-sex figures than with opposite-sex figures, or for that matter, that the great majority of the subjects identified themselves with either type of figure. For neither same-sex nor opposite-sex figures was the number of significant correlations itself significantly different from chance at the .05 level (8).

TABLE I—Significant Correlations between Scores on the EPPS and Scores on a Thematic Apperception Test (R-technique approach)

Group	Need	Same-Sex	Opposite-Sex	t
Male	Exhibition	—.07	—.34*	1.28
Male	Succorance	—.16	—.38*	1.61
Female	Dominance	—.06	—.32*	2.61

*Significant at .05 level.

TABLE II—Significant Correlations between Scores on the EPPS and Scores on a Thematic Apperception Test (Profile-similarity approach)

Subject	Same-Sex	Opposite-Sex	t
Male	.69*	.17	6.53**
Male	.86**	.80**	0.08
Male	.38	.88**	2.34
Male	.44	.94**	3.60*
Female	—.75*	—.76*	0.04
Female	—.70*	—.65	0.28
Female	.23	.69*	1.87

*Significant at .05 level.
**Significant at .01 level.

DISCUSSION

In attempting to interpret the results of this study, the same difficulty arises as with McIntyre's investigation, reported above. The data give little evidence of identification with either same-sex or opposite-sex figures. The critical question still remains, given scores on some measure that *do* correlate significantly with scores on the thematic apperception test, can differences be demonstrated between the correlations involving scores for the two types of figures? In this connection, the degree of relationship between scores for same-sex and opposite-sex figures is pertinent. The highest correlations between the two in the present study were of the order of .80 in the R-technique approach, while in the profile-similarity approach, a number of correlations were above .90. These obviously represent marked relationships, but as McCornack (4) has emphasized in a somewhat different context, as long as the correlation between two predictors is not perfect, it is at least possible that their correlations with a criterion may differ to a statistically significant and practically important degree.[3]

Even if the correlations involving scores for same-sex and opposite-sex figures should prove not to differ significantly, this would not necessarily reflect on the validity or usefulness of the thematic apperception technique. As a number of authors (e.g., Piotrowski (7)) have suggested, the subject may identify himself with all the figures. Alternatively, Lindzey (2) has pointed out that the TAT and related techniques may not depend on any specific identification process, but may simply provide a generalized reflection of the subject's needs, in the manner of his free associations, or his pre-solution hypotheses in a tachistoscopic experiment. If the subject identifies himself with all the figures, or with none of them, there is no reason to expect to find differences of the sort the present study was designed to investigate.

SUMMARY AND CONCLUSIONS

A thematic apperception test using parallel sets of pictures containing male and female figures was administered to 80 college students, equally divided on the basis of sex. The subjects were then given an abbreviated version of the Edwards Personal Preference Schedule (EPPS). Correlations were calculated between scores on the EPPS and scores based on the needs attributed to same-sex and opposite-sex figures on the thematic apperception test. The data gave little indication that the subjects had identified themselves with either type of figure. The findings do not support the hypothesis that the subject's identification with the figures is encouraged by similarity between them and himself, but they do not rule out the possibility that this is the case.

REFERENCES

1. Edwards, A. L. *Edwards Personal Preference Schedule.* New York: Psychological Corp., 1954.

2. Lindzey, G. Thematic Apperception Test: interpretive assumptions and related empirical evidence. *Psychol. Bull.*, 1952, *49*, 1-25.

3. Lord, F. M. A significance test for the hypothesis that two variables measure the same trait except for errors of measurement. *Psychometrika*, 1957, *3*, 207-220.

4. McCornack, R. L. A criticism of studies comparing item-weighting methods. *J. appl. Psychol.*, 1956, *40*, 343-344.

5. McIntyre, C. J. Sex, age, and iconicity as factors in projective film tests. *J. Consult. Psychol.*, 1954, *18*, 337-343.

6. Murray, H. A. *et al. Explorations in personality.* New York: Oxford Univer. Press, 1938.

7. Piotrowski, Z. A. A new evaluation of the Thematic Apperception Test. *Psychoanal. Rev.*, 1950, *37*, 101-127.

8. Sakoda, J. M., Cohen, B. H., & Beall, G. Test of significance for a series of statistical tests. *Psychol. Bull.*, 1954, *51*, 172-175.

9. Walker, Helen M., & Lev, J. Statistical Inference. New York: Holt, 1953.

Received August 4, 1958

---

[3] On the other hand, it may be that if all errors of measurement were eliminated, the correlations between scores for the two types of figures would prove to be perfect (3).

Effects of a Variation in Instructions and Pictorial Stimuli on Responses to TAT-Like Cards[1]

NORMAN SOLKOFF[2]
Connecticut State Hospital, Middletown, Conn.

Several experiments have been performed in an attempt to test the hypothesis that increasing the similarity between *S* and the stimulus figure will result in a greater degree of projection, as measured by verbal productivity (6, 9, 11, 12). All of these studies dealing with factors affecting projection seem to have at least one thing in common: namely, they have been concerned with the manipulation of the stimulus figures.

In a previous investigation dealing with the effects of instructional variation on responses to TAT cards, the author (8) presented a constant set of pictorial stimuli to each *S* but varied the instructions under which the stories were told about these stimuli: half the *Ss* told stories in the third person and half in the first person, i.e., as though they were the characters in the picture. It was found that, for a student sample, telling stories in the first person resulted in significantly longer total times to tell stories, in a significantly greater number of pauses and in a significantly greater total number of words comprising the stories. Initial reaction time was slower, but this difference was not significant.

The present experiment is an attempt to measure the effects of a variation in instructions and pictorial stimuli on response inhibition to TAT-like pictures dealing with the dimensions of sex and hostility. The instruction variable is again divided into first and third person. In contrast to the standard third person instructions, the first person instructions require *Ss* to identify with one of the stimulus figures in each card and to maintain this identification throughout their imaginative production. The pictorial stimuli consist of 12 pictures, six depicting varying degrees of hostility and six representing varying degrees of sexuality. The criterion measures selected for investigation were initial reaction time, total number of words, and inhibition ratings. Since a number of approaches have been devised for the measurement of inhibition, the E selected one which has received considerable operational specification and experimental examination, Rotter's concept of "psychological freedom of movement" (7).

An attempt will be made in this study to answer the following questions:

1. Compared with third person instructions, will first person instructions lead to increased inhibition or lower "freedom of movement," longer initial reaction times, and reduced verbal output in the areas of sexuality and hostility?

2. Will pictures depicting most sexuality (or hostility) in contrast to those depicting moderate or least sexuality (or hostility) lead to lower "freedom of movement," longer initial reaction times, and reduced verbal output?

3. Will there be an interaction between the instructions variable and the degree of either sexuality or hostility expressed by the pictorial stimuli? Will the effect of the instructions on the variable "freedom of movement" as well as on initial reaction time and verbal output depend upon

---

[1] This article is based on a dissertion submitted to the Department of Psychology of the State University of Iowa in partial fulfillment of the requirements for the degree of Doctor of Philosophy. The author wishes to express his indebtedness to Drs. Leonard Worell and Leonard Feldt for their advice and assistance throughout the investigation.

[2] Now at the Connecticut State Hospital.

the extent to which sexuality or hostility is depicted in the picture?

METHOD

Subjects

Ninety white male students enrolled in the introductory psychology course at the State University of Iowa composed the subject population of this study.

Development of Thematic Apperception Pictures

A group of 12 pictures was selected to elicit responses relating to sexuality and to hostility. In order to arrive at this set of pictures, a larger number was initially gathered from numerous magazines. Out of these E selected 15 representing the dimension of sexuality and 15 representing the hostility dimension.[3]

In order to obtain agreement as to the degree of sexuality or hostility depicted, the 30 pictures were presented to 20 male judges, 10 undergraduate students and 10 graduate students in psychology. For the sexuality dimension, judges selected six pictures from among the original 15. These consisted of two depicting the greatest degree of sexuality, two representing a moderate degree, and two containing the least degree of sexuality. The judges followed the same procedure when rating the hostility pictures. Both sets of pictures were rated in the same session. The six pictures in each dimension which obtained the highest agreement among the judges constituted the final set of stimulus figures.

System for Scoring Responses

In order to analyze the content of each story, a scoring system was developed employing Rotter's concept of "psychological freedom of movement" and Crandall's rating scale based upon this concept (1). The ratings involved a seven point scale with a rating of one indicating the highest "freedom of movement."[4] (7, p. 194). In a preliminary study, an attempt was made to train judges in the use of the scoring system and to determine the applicability of Crandall's scoring categories to the present experiment.

Preliminary Study

Experimental designs for the preliminary investigation and the final experiment were essentially the same. The sole difference was in the number of *Ss* used.

Two groups of ten *Ss* each were studied in the preliminary phase. One group was required to respond to the pictures in the third person, while the *Ss* comprising the second group were required to respond in the first person; i.e., to identify with one of the stimulus figures and tell the story as though it was happening to *S* himself.

All 12 pictures were presented in a random order to each *S*. All stories were tape recorded and subsequently transcribed. This procedure yielded 240 stories, each typed on a separate sheet of paper. The E and two graduate students in psychology, all of whom had prior experience with Murray's TAT, served as raters of the stories.

At the outset, the stories of eight *Ss* were used by E to exemplify the indicators of low "freedom of movement" that comprised the scoring system. The three judges met for purposes of defining and discussing the variable "freedom of movement." The judges then rated the stories told by another six *Ss*. After completion of this task, the judges met again and particular disagreements were discussed. The judges then rated the stories of the remaining six *Ss* and the degree of inter-judge agreement was ascertained. At a later date, the judges rated stories told by each of twelve *Ss* to the pictures depicting hostility. This was done because of a slight modification made in the criteria for rating the hostility stories.

---

[3] The criteria utilized in the selection of pictures were:

1. Those comprising the sexuality dimension consisted of a male and a female figure.
2. The pictures comprising the hostility dimension consisted of two male figures.
3. The central figure in each picture was of approximately the same age as the *S*.

[4] The concept "freedom of movement" refers to the probability held by an individual that his behaviors will lead to "positive satisfaction."

Experiment Proper

Seventy *Ss*, 35 in each of the first and third person groups were used in the final experiment. The *Ss* were assigned at random to each instructional condition and were seen individually. In the administration of the pictures, each *S* was given card 6GF from Murray's TAT which served as a sample. This was followed by the twelve remaining cards presented in a randomized order.

RESULTS

Inter-Judge Reliabilities

E's ratings were compared with those of other judges in order to evaluate the communicability and objectivity of the scoring system. This inter-judge reliability was evaluated by means of the intraclass correlation based upon the analysis of variance (3, 2).

The reliability estimate between the mean ratings of the three judges obtained on the first occasion was .91. After discussion of disagreements, the reliability coefficient was .84. On the third occasion, when only the hostility stories were rated, the coefficient of reliability was .85.

Statistical Analysis of Data

Separate Lindquist Type I analyses of variance (4) were carried out for each of the criterion measures, within each of the sexuality and hostility dimensions, yielding a total of six analyses. In this design, all *Ss* experienced each A-treatment (gradations from most to least of either sexuality or hostility). Each A-treatment in combination with any one B-treatment (instructions) was administered to a different group of *Ss*.

In the statistical analysis, the two cards depicting each degree of sexuality and hostility were combined and treated as a unit. Thus, the two cards depicting the greatest degree of sexuality (or hostility), the two cards expressing moderate sexuality (or hostility), and the two cards representing the least degree of sexuality (or hostility) were combined.

Sex Dimension

In general, it may be seen in Table I that the instructions variable produced a significant change in only one criterion measure — inhibition ratings. Under first person instructions there was a significant increase in inhibition or decrease in "psychological freedom of movement." Although the differences are not significant, it is also evident in Table I that first person instructions led to an increment in initial reaction time and a decrement in verbal output.

Next studied was the effect of the sex pictures on *S*'s responses. As can be seen from Table II, the main effect of the degree of sexuality expressed by the pictures was significant for the inhibition ratings, initial reaction time, and verbal output.

Further analysis of the simple effects of pictures yielded the following results: Initial reaction time to the pic-

TABLE I—Means and SDs of Criterion Measures and F Values for Sex Pictures as a Function of Instructions

Criterion	Third Person Instructions Mean	Third Person Instructions S.D.	First Person Instructions Mean	First Person Instructions S.D.	F*
Initial Reaction Time	20.26	12.65	25.86	14.62	3.630
Total Number of Words	162.20	91.25	148.05	81.47	.525
Inhibition Ratings	5.51	2.51	6.43	3.34	4.070

*df=1, 68

$F_{.05}$ (df 1, 68) = 4.00

$F_{.01}$ (df 1, 68) = 7.08

TABLE II—Means and SDs of Criterion Measures and F Values as a Function of the Degrees of Sexuality

	Most		Moderate		Least		
	Mean	SD	Mean	SD	Mean	SD	F*
Initial Reaction Time	24.95	14.61	20.67	12.04	23.56	14.34	4.80
Total Number of Words	149.96	85.07	138.27	67.48	177.14	114.63	16.82
Inhibition Ratings	7.53	3.34	5.08	2.58	5.32	2.49	19.12

*df=2, 136
$F_{.05}$ (df 2, 136)=3.07
$F_{.01}$ (df 2, 136)=4.79

tures depicting moderate sexuality differed significantly from those with most and from those with least sexuality. For total number of words, the differences between pictures depicting least sexuality and pictures depicting most and moderate sexuality were significant. Finally for inhibition ratings, those pictures depicting most sexuality differed significantly from those depicting moderate and least sexuality.

For the response measure, total number of words, the pictures by instructions interaction was significant. A test of the pictures effects at each level of instructions yielded an F of 2.29 ($P>.05$) for first person instructions and an F of 23.26 ($P<.01$) for third person instructions which indicates that the effect of pictures was significant for only third person instructions. Further analysis revealed that the verbal output of stories told to the least sexual pictures was, under third person instructions, significantly greater than for either the moderate or most sexual pictures.

Hostility Dimension

Inspection of Table III reveals that the main effect of instructions was significant for only one response measure, initial reaction time. Under first person instructions there was a significant increment in initial response latency. It is also evident from an examination of Table III that there was a decrease in verbal output under first person instructions, but this difference was not significant. Finally, no differences were obtained with the inhibition ratings.

The effect of the hostility pictures

TABLE III—Means and SDs of Criterion Measures and F Values for Hostile Pictures as a Function of Instructions

	Third Person Instructions		First Person Instructions		
	Mean	SD	Mean	SD	F*
Initial Reaction Time	20.90	16.35	31.39	18.89	7.47
Total Number of Words	205.12	129.35	175.09	98.79	1.42
Inhibition Ratings	7.46	2.72	7.16	2.84	.58

*df=1, 68
$F_{.05}$ (df 1, 68) =4.00
$F_{.01}$ (df 1, 68) =7.08

TABLE IV—Means and SDs of Criterion Measures and F Values as a Function of the Degree of Hostility

Criterion	Most		Moderate		Least		
	Mean	SD	Mean	SD	Mean	SD	F*
Initial Reaction Time	26.30	17.70	27.66	19.49	24.48	17.94	1.64
Total Number of Words	202.70	145.52	191.19	97.72	176.42	97.19	3.69
Inhibition Ratings	8.35	3.68	7.99	2.64	5.60	2.32	27.31

*df=2, 136
$F_{.05}$ (df 2, 136) =3.07
$F_{.01}$ (df 2, 136) =4.79

was investigated next. As indicated in Table IV, the pictures variable produced significant changes in both total number of words and in the inhibition ratings.

Further analysis of the simple effects of pictures yielded the following results: For total number of words, the difference between pictures depicting most and least hostility was significant. For the inhibition ratings, the differences between pictures depicting least hostility and those depicting moderate and most hostility were significant.

No pictures by instructions interactions were found.

Order

The effect of order of presentation of the pictorial stimuli was also studied. Differences in criterion means between the first two, middle two, and last two cards presented to each *S* were evaluated by means of a Lindquist Type I analysis of variance.

Only for the response measure total number of words was the effect of order of presentation significant.

DISCUSSION

On the whole, the findings of this investigation provide only a partially consistent picture of response inhibition to TAT-like pictures with variations in instructions and degree of sexuality and hostility. Initial reaction time was significantly increased under first-person instructions only for the hostility pictures, while the inhibition ratings were significantly heightened under first-person instructions only for the sexuality series. Verbal output was consistently, although not significantly, reduced under first-person conditions.

The question also arose whether inhibition would vary with the degree (i.e. most, moderate and least) of sexuality and hostility depicted. The results have shown that initial reaction time was shortest for the moderately sexual pictures while the hostile pictures produced no significant changes in the response latency measure. Verbal productivity was greatest for the least sexual pictures but was also greatest for the most hostile cards. Finally, the inhibition ratings were highest for stories told to both the most sexual and most hostile pictures.

Since the three response measures employed in this study were not consistently affected by both a variation in instructions and pictorial stimuli, it seemed desirable to investigate the degree of relationship between the three measures. By means of the Pearson *r*, all the criterion measures were intercorrelated under each instructional condition and for each dimension. Of the twelve correlations obtained, only one was significant, suggesting that the three criteria used in this study were not measuring the same aspect of inhibition.

The fact that the inhibition ratings did not show a relationship to the other measures is perhaps not surprising. One might suggest that the inhibition ratings were centered upon an analysis of the content of *S*'s fantasies involving the expression or suppression of sexual or hostile feelings. On the other hand, the response measures verbal output and initial reaction time seemed to deal with more formal response characteristics and need not necessarily have any correlate with content. It is not clear however why the two measures of formal characteristics, initial reaction time and verbal output, were not related, especially since both measures were similarly affected by the instructions variable.

In the absence of previous relevant experimental data dealing with the three criteria, the investigator was led to examine the instructional conditions for hypothetical sources of variance. For some *Ss*, it is conceivable that first-person instructions represented a more unfamiliar situation than third-person instructions, since culturally little emphasis is placed on talking about pictures, movies, television, etc. in the first person. For other *Ss* first-person instructions may have served as a stressful situation.

Thus, it would seem that the assumed noncomplexity of the instructions might not be justified.

Neither the suggestion that the instruction variable is complex, nor the absence of relationships between the response measures, however, permit us to dismiss the divergences occurring within a single criterion measure. For the hostility series, the inhibition ratings were not differentially affected by the instructions, whereas significant differences appeared in the sex dimension. A valid comparison between the two areas is not possible in this study since the pictorial stimuli constituting the sex and hostility dimensions were not equated for intensity.

Before turning to an examination of the effects of pictorial variation, it should again be born in mind that since the response measures were unrelated, one would not expect a necessary and consistent relationship between pictorial variation and the three criterion measures. The only consistent finding was that the inhibition ratings were highest for those pictures depicting both most sexuality and most hostility. These results suggested that the intensity of pictorial situations may influence the degree of content inhibition revealed by an individual.

Initial reaction time, on the other hand, did not appear to be importantly affected by variations in pictorial stimuli.

Finally, it was shown that verbal output was greatest under conditions of least sexuality, but was also greatest for the most hostile pictures. Although it was not clear from the data why this reversal should have occurred, it could be that verbal output as a response measure does not in fact operate in a consistent fashion in various "socially" inhibiting situations. Before a more definite interpretation can be made, verbal productivity would have to be studied to a wide variety of pictorial situations.

A final aspect of the study dealt with the attempt to investigate the effects of successively responding to the cards. Only for the response measure, total number of words, was the order effect significant; an increase in verbal output occurred from the first two to the last two cards. This finding was congruent with that of a previous investigation (8) in which two administrations of TAT cards also resulted in a significant increase in total number of words. The most apparent explanation for this order effect is that each card served as a unit of practice which facilitated more elaborate productivity on succeeding cards. It is evident that the effects of practice on verbal output would need to be considered in future researches of this kind.

The results of this study may have implications for both the content and the method of presentation of pictorial stimuli. Of the two conditions employed, instructions and pictorial variation, the instructions variable led to more consistent findings, with respect to all three criteria while variations in pictorial stimuli resulted in uniform and significant changes only in the inhibition ratings. These results however cannot be interpreted to indicate the superiority of one form of instructional condition over another in presently conceived pictorial techniques nor is the predictive validity of the heightened inhibition ratings known.

It should finally be noted that the absence of any correlations between the three responses measures certainly suggests the necessity of exercising caution in their further utilization.

Summary

The purpose of this study was to investigate the effects of variations in instructions and pictorial stimuli on responses to TAT-like cards dealing with the dimensions of sex and hostility. First and third person instructions were administered in combination with pictorial stimuli ranging from most to least sexual or hostile.

Twelve TAT-like pictures, six depicting sexual scenes and six repre-

senting hostile content were administered at random to each of 70 *S*s in the experiment proper. One group of 35 *S*s was instructed to tell stories in the first person, while a different group of 35 *S*s told their stories in the third person. Three criterion measures were examined — initial reaction time, total number of words, and inhibition ratings. To arrive at ratings of inhibition, a scoring scheme was developed utilizing the concept of "psychological freedom of movement."

It was found that under first-person instructions, initial reaction time was significantly increased for the hostility pictures, while the inhibition ratings were significantly heightened only for the sexuality series. Verbal output was consistently though not significantly reduced under first-person instructions.

As regards the intensity of the pictorial stimuli, it was shown that initial reaction time was shortest for the moderately sexual pictures, while the hostile pictures produced no significant differences. The inhibition ratings, on the other hand, were highest for stories told to both the most sexual and hostile pictures. Finally, verbal output was greatest for the least sexual pictures but was also greatest for the most hostile cards.

The absence of any relationship between the three response measures as well as the possible complexity of the instructions variable were discussed as possible factors in the explanation of the results and some problems for future research were offered.

REFERENCES

1. Crandall, V. J. Induced frustration and punishment-reward expectancy in thematic apperception stories. *J. consult. Psychol.*, 1951, *15*, 400-404.

2. Ebel, R. L. Estimation of the reliability of ratings. *Psychometrika*, 1951, *16*, 407-423.

3. Guilford, J. P. *Psychometric methods.* New York, London: McGraw-Hill, 1954.

4. Lindquist, E. F. *Design and analysis of experiments in Psychology and Education.* Boston: Houghton Mifflin, 1953.

5. Murray, H. A. *Thematic Apperception Test manual.* Cambridge: Harvard University Press, 1943.

6. Riess, B. F., Schwartz, E. K. and Cottingham, Alice. An experimental critique of assumptions underlying the Negro version of the TAT. *J. abnorm. soc. Psychol.*, 1950, *45*, 700-709.

7. Rotter, J. B. *Social learning and clinical psychology.* New York: Prentice-Hall, Inc., 1954.

8. Solkoff, N. Some effects of a variation in instructions on TAT responses. Unpublished master's thesis, State University of Iowa, 1957.

9. Thompson, C. E. The Thompson modification of the Thematic Apperception Test. *J. proj. Tech.*, 1949, *13*, 469-478.

10. Tomkins, S. S. *The Thematic Apperception Test: the theory and practice of interpretation.* New York: Grune and Stratton, 1948.

11. Weisskopf, Edith A. and Dunlevy, G. P., Jr. Bodily similarity between subject and central figure in the TAT as an influence on projection. *J. abnorm. soc. Psychol.*, 1952, *47*, 441-445.

12. Weisskopf, Edith A. and Money, L., Jr. Facial similarity between subject and central figure in the TAT as an influence on projection. *J. abnorm. soc. Psychol.*, 1953, *48*, 341-344.

Received June 12, 1958.

Reliability in the 'Draw a Person' Test

S. STARR AND F. L. MARCUSE
State College of Washington

It is said that in projective tests — as differentiated from traditional psychometric tests — statistical reliability may be low and validity may be high. However, when validity is open to question (5) it is of value to know just what factors in the test under investigation are and what factors are not reliable in the psychometric sense. Machover (2), it is true, discusses the problem of reliability in relation to formal and structural aspects in her DAP test but reliability for her is a matter of clinical observation. Swensen (5) reported two studies concerned with reliability in Machover's test but concluded that "these studies do not provide valid estimates." There were two main criticisms of these studies. The data were treated only in terms of percentages of agreement between the two administrations of the test and chance was assumed, a priori, to be fifty per cent instead of being computed as a base rate (4) from the marginal frequencies of a chi square table.

The authors of the present study wished to investigate reliability and the effect on reliability of using different Es and different time intervals between administrations. Reliability in this study was defined as better than chance relationship as determined by base rates for certain characteristics on successive drawings in the DAP test.

PROCEDURE

The 193 Ss used were college students from introductory courses at the State College of Washington. They were divided as follows: group A (35 males, 35 females), group B (26 males, 31 females), group C (29 males, 37 females). Table I indicates the experimental design used.

TABLE I—Experimental Design

Group A (N=70)	Group B (N=57)	Group C (N=66)
DAP–1, E_1	DAP–1, E_1	DAP–1, E_1
1 month	1 month	DAP–2, E_1
DAP–2, E_1	DAP–2, E_2	(Immediate)

All groups were given instructions to draw a person each time. The design employed (Table I) allowed for evaluating the effects on reliability of the same and different Es (group A vs. group B), the effects of different time intervals (group A vs. group C) as well as reliability itself (groups A, B, C).

At the termination of the second administration the following question was asked of all groups. "Did you think that on the second drawing you were to (a) draw as similar a picture as possible to the one drawn before (b) draw as dissimilar a picture as possible to the one drawn before (c) thought it made no difference what one drew."

The following characteristics[1] in the DAP, as here defined, were analyzed for reliability.

1. Placement on page[2]: Left, middle
2. Sex drawn: Male, female

---

[1] Characteristics which lent themselves to objective measurement were used. A distinction was made between autonomous and contingent characteristics. Autonomous was defined as being independent of any other factor (e.g. sex drawn) whereas contingent was defined as dependent upon other factors (e.g. height of figure depends upon whether the individual has drawn a whole or incomplete figure). Since this differentiation was allowed for in the analysis of data, the N for any particular characteristic varied.

[2] Originally five positions were designated. Of these, two were never selected and one was selected by seven Ss on one drawing only. The percentage of left-handed subjects who chose the left portion of the paper did not differ significantly from the percentage of right-handed persons who chose

3. Presence or absence of sex symbols
4. Perspective: Front, profile[3]
5. Incompletions: Complete, incomplete (lack of arm, leg, torso, trunk, head)
6. Height: Toes to head
7. Size of head in relation to body height

Chi square was the statistic used for characteristic 1-5 inclusive and when significant ϕ/ϕ max. was computed to determine the extent of the relationship. For characteristics 6 and 7 product-moment correlation coefficients were computed.

In scoring the second drawing the E was unaware of the S's identity, the group (A, B or C) to which he belonged, and the manner in which the first picture was drawn. Analysis of reliability was made for males and females separately when indicated (Table II).

RESULTS

Groups A, B, and C did not differ significantly from each other on the second administration on any of the characteristics described. Inasmuch as a different E and a different time interval had no effect on reliability, groups A, B, and C were combined.[4]

Table II presents chi squares for characteristics 1-5 and critical ratios for characteristics 6 and 7 (resulting from r to z transformation) for comparisons of male and female scores on the two administrations considered together of the DAP.

TABLE II—Comparison of Male and Female Scores (Groups A, B, and C Combined) on Seven Characteristics of the DAP Test.

Characteristic	X^2	*CR*
Incompletions (N=88M, 103F)	.16	
Position on page (N=77M, 86F)	.00	
Perspective (N=71M, 77F)	1.87	
Sex drawn first (N=89M, 102F)	23.10*	
Presence or absence of sexual symbols (N=89M, 102F)	4.40*	
Height of figure (N=55M, 69F)		.88
Ratio of head to height of figure (N=55M, 69F)		1.83

*Indicates significant differences at the .01 level

TABLE III—Relationship (reliability) between Scores on First and Second Drawings for Characteristics in which Sex Differences are not Present

Characteristic	X^2	ϕ/ϕ *max.*	*r*
Incompletions (N=191)	39.5*	.54	
Position on page (N=163)	25.2*	.43	
Perspective (N=148)	13.3*	.31	
Height of figure (N=124)			.52*
Ratio of head to height of figure (N=124)			.23*

*Indicates significant relationship $< .01$

TABLE IV—Chi Square (reliability) between Scores on First and Second Drawings for Characteristics in which Sex Differences are Present

Characteristic	*Males (N=89)*	*Females (N=102)*
Sex drawn first	—*	1.22
Number of sexual symbols	1.17	3.20

*Since expected frequencies in some cells were small because of extremes in the marginal distributions, the exact probability method (1) was used. For a two-tail test P was .018 indicating reliability of sex drawn first for male Ss.

Table II reveals that the sexes do not differ significantly on placement

---

the left part of the paper, and consequently were not separated in analysis of the data. The drawing was said to be in the area which contained two-thirds of the length. This figure was suggested by a pilot study involving 140 drawings.

[3] Originally five aspects were considered but the low frequency with which some perspectives were selected made it difficult to meet the assumptions of Chi Square.

[4] These data are available in "Reliability of the Draw-A-Person Test in Projective Psychology," an unpublished thesis by Sheldon Starr, State College of Washington Library, 1954.

on page, perspective, incompletions, height of figure and size of head in relation to body height. They do differ significantly on sex drawn, and presence or absence of sex symbols. Consequently the data, in light of the above, were analyzed as shown in Tables III and IV.

To make the data for both administrations, i.e., the drawings obtained on both occasions, meaningful in another way characteristics 1 to 5 are also reported descriptively as follows:

1. Placement on page:
   58% of Ss chose the left side of the page.
   15% of Ss chose the center of the page.
   27% of Ss varied.
2. Sex drawn:
   19% of females drew males.
   39% of females drew females.
   42% of females varied.
   87% of males drew males.
   3% of males drew females.
   10% of males varied.
3. Presence or absence of sex symbols[5]:
   20% of females had sex symbols present.
   41% of females had sex symbols absent.
   39% of females varied.
   35% of males had sex symbols present.
   10% of males had sex symbols absent.
   55% of males varied.
4. Perspective:
   55% of Ss drew a front view.
   16% of Ss drew a profile.
   29% of Ss varied.
5. Incompletions:
   61% of Ss drew complete figures.
   17% of Ss drew incomplete figures.
   22% of Ss varied.

On the question asked of all Ss after the second drawing, 20 thought they had to draw a figure similar to, and 5 dissimilar to, the first drawing. The remaining 168 Ss thought that what they drew made no difference.

DISCUSSION

Machover's personal belief in the reliability of many aspects of her test is based either on unpublished research (3) or as indicated has been of the "clinically useful" variety. According to Machover (3) drawings should vary somewhat, for if they remained exactly the same they might indicate, according to her, lack of development, pathological rigidity, or impoverished resources. The basic question, however, is to what extent should the drawings vary on different occasions?

In the present study five factors were found to be reliable for both sexes, i.e. to appear consistently on both the first and second administrations (perspective, position on page, incompletions, height of figure, and ratio of head size to the height of figure, (Table III)), one factor was found to be unreliable for both males and females (presence or absence of sexual symbols (Table IV), one factor was reliable for males only (sex drawn, (Table IV)).

While the statistical criticisms of the two studies cited by Swensen (5) have been mentioned, it should be noted that the instructions employed in both these studies were to draw a *whole* (italics the authors') person. Such instructions make it difficult to evaluate the reliability of incompletions.

Some clinicians argue that it is not fruitful to study reliability by analyzing each drawing characteristic separately. They would argue that a holistic analysis arrived at on the basis of total impression is superior. The rationale for this claim is that a skillful clinician would never make an interpretation of a drawing on the basis of a single characteristic, but rather on the basis of a pattern of characteristics. However, the criterion or criteria of holistic analysis are frequently vague and non-communicable. It can be argued that when an individual operates on the basis of some total impression, he is in effect selecting out certain cues which can objectively be described. Thus it is possible that the clinician is actually utilizing isolated cues. It is important to understand such individual characteristics at the same time as, or before, we attempt to understand configurations of factors.

---

[5] This characteristic was concerned only with presence or absence and not kind. Of 19 Ss who actually had the same *number* of sex symbols on both drawings, four had the same *kind*.

The results obtained in this study cannot be explained on the basis of the fact that 20 Ss thought they had to produce drawings on the second test similar to those done on the first test, for it was found by inspection, that these 20 drawings were actually no more nor less reliable than the drawings of the other Ss.

While the lack of reliability in a projective test does not exclude the possibility of validity, the presence of (traditional) reliability in some of the factors makes the study of validity more encouraging. The findings also introduce a note of caution for those clinicians who utilize the DAP test in making predictions and diagnoses of varied nature for specific individuals. For though the results, significant at the .01 level, show reliability, it should be remembered that this finding pertains to groups and that the relationships reported vary in magnitude.

SUMMARY

The study of the reliability of seven factors in the DAP as measured by test-retest in the drawings of 193 Ss showed: (1) a change in E was not important (2) a difference in time interval (between test and retest) had no effect (3) five factors were found to be reliable and one unreliable, for both men and women, and one factor was reliable for men only (4) the data could not be interpreted as being a function of set on the part of the S.

REFERENCES

1. McNemar, Q. *Psychological statistics* (2nd ed) New York: Wiley, 1955.

2. Machover, Karen A. *Personality projection in the drawing of the human figure*, Springfield, Illinois: C. C. Thomas, 1949.

3. Machover, Karen A. 1954, Personal communication.

4. Meehl, P. E. and Rosen A. Antecedent probability and the efficiency of psychometric signs, patterns, or cutting scores. *Psychol. Bull.*, 1955, *52*, 194-216.

5. Swensen, C. H. Jr. Empirical evaluations of human figure drawings. *Psychol. Bull.*, 1957, *54*, 431-466.

Received June 20, 1958

Rorschach Developmental Level and Social Participation of Chronic Schizophrenics[1]

HAROLD WILENSKY[2]
Franklin Delano Roosevelt Veterans Administration Hospital, Montrose, New York

Through the application of Werner's theory (10) of developmental levels of perceptual organization to Rorschach scoring, it has been possible to demonstrate relationships between Rorschach performance and overt behavior. The process of maturing is described in terms of increasing differentiation and integration of behaviorial units. In applying developmental theory to perception, one would expect increasing organization of stimuli with increasing chronological maturity.

Since 1953, a number of investigators have been applying this concept to Rorschach responses. Hemmendinger (4) demonstrated a positive relationship between age and maturity of perception. Friedman (2) applying genetic theory to psychopathology found that the Rorschachs of schizophrenics consisted of perceptions representing early and late developmental levels. Siegel (7) comparing paranoid with hebephrenic and catatonic schizophrenics reported that the paranoid group produced more differentiated or mature responses than the hebephrenic and catatonic groups. Employing this conception with normal adults, Lane (5) was able to discriminate between high and low socially effective groups. More recently, Becker (1) demonstrated a striking relationship ($r = -.64$) between the Elgin Prognostic Rating Scale and a Rorschach genetic (developmental) level score. This score was obtained by assigning ranked weights to responses according to degree of differentiation and integration of the response and then obtaining a mean score for each record. These studies based upon developmental theory suggest a means of employing the Rorschach to predict overt behavior. So far this is an area in which the Rorschach has been relatively inefficient (3).

The present study sought to continue the exploration of behavioral correlates of developmental level as measured by Rorschach performance. The aspects of overt behavior selected for study dealt with the effectiveness of participation in a cooperative social situation and independence of functioning among hospitalized schizophrenics. With maturity the individual tends to develop into a social organism with egocentric behavior gradually giving way to sociocentric cooperative group participation (6). Another aspect of psychological maturity deals with the individual's ability to assume independent responsibility for himself. Among hospitalized schizophrenics this level of functioning is reflected in the patient's hospital adjustment. Patients granted privileged status were capable of assuming a degree of independent responsibility for their behavior, whereas those who require close supervision and guidance in everyday hospital living are retained in closed wards. Positive relationships therefore were hypothesized between the level of perceptual organization (developmental level) as determined by Rorschach performance and (a) effectiveness in a social situation and (b) adequacy of hospital adjustment.

---

[1] The first study reported in this paper was presented at the meeting of the Eastern Psychological Association held in Philadelphia, April, 1957.

[2] The author is grateful to Dr. Jacob Cohen and Dr. Herbert E. Spohn for their assistance and suggestions and to the Psychology Trainees at the VA Hospital, Montrose, New York, who participated in the data collection. The small group experiments conducted by Spohn and his associates provided the opportunity to measure the dimensions of social behavior described in this paper.

METHOD

A total of 32 chronic schizophrenic male patients with a median age of 35 years were selected for the study. Four patients, however, refused Rorschach examination. Of the remaining patients, 14 were from non-disturbed closed wards and 14 were from privileged wards. The mean length of time since first hospitalization of the closed ward group was ten years while the mean of the open ward group was five years. The difference is significant at the .01 level. The two groups appeared to be quite heterogeneous with respect to severity of illness. At the time of the study only some ten per cent of the hospital population were on privileged status. The open ward group represented a sample of the healthiest patients in terms of their hospital behavior.

Rorschachs were administered individually and scored in the standard manner by psychology trainees. Responses then were classified and weighted by the author according to the development level of organization following the system devised by Becker (1). Since the scoring system is fairly objective, contamination of scoring due to knowledge of the patient's ward was probably minimal. This system[3] is based upon Werner's developmental theories and the previously mentioned empirical studies (2, 4, 7). Briefly, the highest level (scored six) demands articulation of an unbroken area and reintegration into a good form percept (Card IV: "A giant sitting on a stump").

A score of five requires combination of discrete areas into one good form percept (Card II: "Bears fighting").

A score of four entails accurate differentiation and simple integration (Card I: "Bat").

Vague wholes, oligophrenic details, and unusual details of good form are given a score of three.

Amorphous, vague, confabulatory, and minus details receive a score of two.

Amorphous, confabulatory, and minus wholes and contaminated, perseverative, or fabulized combinations receive a score of one. The mean of the assigned development level (*DL*) scores was calculated for each subject.

The experimental social situation and the scale for rating social participation were devised and carried out by Spohn and Wolk in a study of cooperative behavior of schizophrenic patients (8). The subjects worked in four-man groups. They were observed and rated on two occasions, once in a group with patients from similar wards (either privileged or nonprivileged) and once with mixed open and closed ward patients. They were instructed to solve five problems of increasing complexity. Each problem required cooperation by all subjects. For example, in one task each subject was handed a card with a number on it. The subjects were then asked to rearrange their seats so that they would be sitting in numerical order with the person with the highest number in the first seat, next highest number in the second seat, etc. In order to perform this task, the subjects had to inform each other of their numbers, or at least permit other subjects to look at their card. Two psychologists observed the groups through a one way vision screen and rated each subject on an equal-appearing-intervals scale. This scale had been constructed using psychologists as judges and its categories reflect the degree of contribution of each subject to the achievement of the group objective. The scale categories range from leadership activity through independent cooperation, and several degrees of compliant behavior to nonparticipation and interfering behavior.

RESULTS

The *DL* score and the ratings of

---

[3] For a more detailed chart of examples of the scoring system and additional references the reader is referred to Becker (1).

participation in the social situation yielded a Pearson r of .71 ($P<.01$, two tailed test). The biserial correlation between level of hospital adjustment (privileged and nonprivileged) and *DL* was .82 ($^{s}r_{b}=.25$ for zero correlation.)

These strikingly high correlations tend to support the hypotheses that level of perceptual development, as reflected in Rorschach performance, is positively related to hospital adjustment and to level of participation of schizophrenics in a social situation. In drawing inferences from the correlation between *DL* and hospital adjustment the gross behaviorial differences between the two groups must be kept in mind. These differences between the open and closed ward groups could probably be detected without specialized techniques.

Examination of the correlation between *DL* scores and social participation ratings within each group separately, revealed a limitation of the *DL* score. While a significant correlation (.55, $P<.05$) was found for the closed ward group, the *DL* and social participation correlation for the open ward group was near zero ($r=.05$). The inability to demonstrate a relationship within the privileged group can be understood in terms of the relative lack of variation among the *DL* scores of these healthier patients. The variance of the closed ward group's *DL* distribution (.71) was significantly greater ($P<.01$) than the variance of the open ward group (.10). The small variability made correlation unlikely since it entailed differentiation among a highly homogeneous group.

The mean social participation rating of the closed ward group reflected behavior characterized by participation in achieving the group objective when instructed to do so by another subject. The behavior of individual subjects ranged from withdrawal or refusal to participate to taking an active leadership role and encouraging others to act appropriately. Among the open ward patients the mean rating represented behavior which entailed active, independent steps toward the achievement of the group objective. The lowest rating obtained by a privileged patient was somewhat above the average level of the closed ward group. See Table I for means and standard deviations of the *DL* scores and social participation ratings.

In following up the hospital adjustment of the regressed group, five of the original fourteen patients were moved to open wards within a period of six months. All five patients had obtained *DL* scores above the median for their group. The change in status for these patients did not necessarily reflect improvement since it coincided with a change in hospital policy which increased the number of open ward patients. This event may be regarded as further evidence of the relevance of developmental level as a measure of independent functioning. Another study by Spohn and Wolk (9) evaluating the effects of practice on social participation made possible a replication of this first test of the

TABLE I—Means and Standard Deviations of *DL* Score, Number of Rorschach Responses (*R*), and Social Participation Ratings

	First Study				Second Study	
	Open Ward Group N=14		Closed Ward Group N=14		Closed Ward Group N=16	
Variable	Mean	*s*	Mean	*s*	Mean	*s*
DL Score	3.72	.32	2.63	.84	2.65	.67
R	21.00	9.14	14.43	7.62	12.88	3.81
Soc. Part. Ratings	8.48	.95	6.23	1.14	5.56*	.81

*Different social situation tasks were used in the second study. The score represents the averaged ratings on three occasions.

behavioral correlates of developmental level.

SECOND STUDY: METHOD

Thirty-two schizophrenic patients were selected from closed wards for the second social participation study. The mean age of this group was 33 years with an average length of time since first hospitalization of 9 years. The patients were rated for social participation on three occasions in the manner described in the previous study. Following the first social participation rating a four week period intervened during which half of the group was exposed to practice in very simple group tasks while the other half continued their usual hospital life. At the end of this period the patients were rated again for social participation on two occasions within one week, once working in a group with subjects whom they had previously not worked with (stranger situation) and then in a group in which the subjects had worked together in earlier trials (familiar situation).

Administration of individual Rorschachs was attempted during the four-week interval. Only sixteen of the thirty-two patients produced scorable records with eight or more responses. Four subjects who produced fewer than eight responses were dropped. The remaining twelve patients refused testing.

The hypothesis to be tested was that there would be a positive relationship between social participation and *DL* score (replication of the first study). Because of the relatively small number of patients producing adequate records, the practice (10 subjects) and control group (6 subjects) data were combined.

SECOND STUDY: RESULTS

On first exposure to the group problem solving tasks, most patients sat passively and contributed very little to the solution of the problems. These tasks were somewhat more complex than those used in the previous study. Consequently, the distribution of social participation ratings for the sixteen testable patients revealed extremely small individual differences ($s^2 = .17$). The correlation between *DL* scores and social participation ratings, however, was in the hypothesized direction, but not significant. ($r = .38$; $s_r = .26$).

For closed ward patients who have been accustomed to the uninterrupted monotony of hospital routine, the novelty of the first exposure to the social situation may have contributed to the freezing of activity. In the first study this phenomenon was not displayed, probably because of the stimulation by the relatively healthier patients. In the later trials of the second study, increased variability was evident within the control group as well as the practice group suggesting that the familiarity with the situation and psychologists provided by the first trial, and also the individual testing experience, may have been sufficient to permit the patients to engage in the tasks more actively. In the two later trials, the range of behavior manifested extended from withdrawal to leadership activity. The variances of the social ratings in the stranger situation increased to 1.88 and in the familiar situation to .89. The correlations between *DL* score and the stranger and familiar social situations then became substantial and significant ($r = .58$; $P < .05$ and $r = .86$; $P < .01$ respectively). See Table I for the means and standard deviations of the *DL* score and the average score of the three social participation ratings for the second study.

The findings of the second study can be considered generally as supporting the hypothesis that a relationship exists between social participation and Rorschach developmental level. Of particular interest was the finding that the *DL* score could differentiate among a group of patients who appeared very much the same in their overt behavior initially. When individual differences in overt behavior did become evident in later social situation trials, the relevance of the *DL* score, in terms of the substantial correlations with ratings of social participation, was demonstrated.

DISCUSSION

The *DL* score appears to have behavioral correlates which may ultimately provide a basis for employing the Rorschach as a more accurate predictive instrument. The *DL* score has advantages over the more atomistic Rorschach scores in that a number of elements, namely, form definiteness, location, integration of parts, logical coherence of parts, and form appropriateness, are taken into account simultaneously. It also minimizes some of the pitfalls of relatively unreliable global, intuitive evaluations of Rorschach protocols. The *DL* score appears to lie in between the global and atomistic — a middle of the road approach — which Hamlin (3) and his associates have found to be more successful in the prediction of overt behavior than either the global or atomistic approaches.

As used in the present study some limitations of the *DL* score became evident. It did not appear to discriminate adequately among the fairly select group of relatively healthier patients. With the current scoring system, a ceiling effect seemed to be operating which tended to reduce the variability of the obtained distribution of scores. It would be desirable to refine the *DL* score and widen the range of scores by determining the extent to which each of the above mentioned elements contributes to the total *DL* score as well as their relationship to criterion measures of emotional maturity. Weights assigned to various levels of responses might then be revised based upon such relationships.

Number of responses (*R*) which constantly complicates attempts at quantifying Rorschach variables also played a role in the *DL* score. In the first study healthier patients produced significantly (.05 level) more responses than the closed ward patients. (See Table I for the mean number of responses.) The relationship between *DL* and *R* appeared to be complex. The correlations between *DL* score and *R* for the two closed ward groups were .33 and .35. For the healthier group the relationship was small but negative (—.18). The number of high level responses possible is limited. As productivity increases, more mediocre level responses are produced with consequent lowering of the average *DL* score. This also contributed to the ceiling effect mentioned above.

In attempting to determine the split-half reliability of the *DL* score, each card was treated as a separate item and the mean *DL* score per card obtained. In order to deal with card rejections, it appeared reasonable to assume that the inability to form a percept was a low level of behavior. Such an assumption is supported by the finding that the total number of responses increased with chronological maturity until age seven or eight (4). For the 44 subjects in the two studies (using an odd-even card split) the Spearman--Brown corrected split half reliability coefficient was .88.

The revised total scores obtained in this manner were almost identical with those obtained using Becker's scoring system. The correlation between the two methods of calculating *DL* was .95. Obtaining an average score for each card and then a mean total *DL* score appeared to have the advantage of reducing the contribution to the total score made by certain cards (particularly Card X) which tends to elicit large numbers of good form details. For these groups this revision in the scoring system served to increase the variability of the *DL* distribution.

SUMMARY

Fourteen closed ward and fourteen open ward chronic schizophrenic patients were administered individual Rorschachs. The responses were scored

according to their developmental level and a mean score for each patient was calculated. These scores were correlated with the ward status (open or closed) and with the ratings obtained from the patient's participation in a social situation requiring cooperation among subjects. Strikingly high correlations between *DL* scores and ward status and social participation were obtained in support of the hypotheses. In a second study with sixteen regressed patients, a small positive relationship was obtained between *DL* scores and social participation ratings in an initial trial. In two later trials, however, in which individual differences were accentuated, significant relationships between *DL* scores and social participation ratings were obtained. These findings and the work of Becker and others suggest that the application of Werner's developmental theory to Rorschach performance may provide a basis for the more accurate prediction of overt behavior.

REFERENCES

1. Becker, W. C. A genetic approach to the interpretation and evaluation of the process-reactive distinction in schizophrenia. *J. abnorm. and soc. Psychol.*, 1956, 53, 229-236.

2. Friedman, H. Perceptual regression in schizophrenics: an hypothesis suggested by use of the Rorschach test. *J. proj. Tech.*, 1953, *17*, 171-185.

3. Hamlin, R. M. The clinician as judge: judgments of adjustment from Rorschach. *J. consult. Psychol.*, 1954, *18*, 243-247.

4. Hemmendinger, L. Perceptual organization and development as reflected in the structure of the Rorschach test responses. *J. proj. Tech.*, 1953, *17*, 162-170.

5. Lane, J. E. Social effectiveness and developmental level. *J. Pers.*, 1955, 23, 274-284.

6. Piaget, J. *The moral judgment of the child*. Glencoe, Ill.: Free Press, 1948.

7. Siegel, E. L. Genetic parallels of perceptual structurization in paranoid schizophrenia: an analysis by means of the Rorschach technique. *J. proj. Tech.*, 1953, *17*, 151-161.

8. Spohn, H. E. & Wolk, W. The effect of changes in the social stimulus situation upon social participation in chronic schizophrenics. Paper read at East. Psychol. Assn., New York, April, 1957.

9. Spohn, H. E. & Wolk, W. The effect of group problem solving experience upon social withdrawal in chronic schizophrenics. Paper read at East. Psychol. Assn., Philadelphia, April, 1958.

10. Werner, H. *Comparative psychology of mental development*. (Rev. Ed.) Chicago: Follet, 1948.

Received June 30, 1958

BOOK REVIEWS

Hammer, Emanuel F., *The Clinical Application of Projective Drawings,* Springfield: Charles C. Thomas, Publisher. 1958. $13.50.

This 650-page volume abounds with clinical material illustrating the application of projective drawing methods. It contains among its contributors such luminaries of the projective drawing world as John N. Buck and Karen Machover, as well as Lauretta Bender, Fred Brown, Florence Halpern, Molly Harrower, Everett Heidgerd, Issac Jolles, G. Marian Kinget, Zelma Landisberg, Sidney Levy, Margaret Naumburg, Paul Schilder, and Edwin S. Shneidman.

Probably the greatest value of this book is to be found in the reader's opportunity to look over the shoulders of some of the most highly skilled clinical psychologists of our day and see them displaying their clinical intuition through the projective-drawing medium. However, the reader should keep in mind when perusing these pages that a number of assumptions are being made, some of which may be less acceptable than others. These assumptions are: 1) all behavior is determined; 2) behavior is basically consistent; 3) behavior is purposive and meaningful; 4) the expressive modality produces important and significant samples of behavior; 5) expressive productions are interpretable in terms of structure (based upon Gestalt and Perceptual theory) and content (based upon the assumption of universal symbolism); 6) psychologists know how to make these interpretations and predictions correctly despite the absence of proof (Allport is quoted toward the end of the book as having said "The greatest failing of the psychologist at the present time is his inability to prove what he knows to be true."); 7) it is highly desirable in clinical testing to make interpretations at increasingly deeper levels because the deeper the level the more profitable these interpretations become; 8) the use of terms such as "normative" and "empirical" may refer to one's own clinical experiences even though these latter have not been compared with any criteria or statistically evaluated.

At the outset the author expresses the fond hope that at long last some light will be shed on the elusive matter of the validity of claims made for the predictive efficiency of projective drawings. In the preface the reader may be interested to hear that Machover reportedly stated that experimentation is needed to keep up with the rich clinical yield. The assumption evidently is that the purpose of experimentation is *verification* rather than investigation. The reader may be uplifted at hearing Hammer refer to "the happy marriage of theory and empiricism," but left to wonder as he continues whether this marriage is ever consummated. The author points to 20 years of experience with clinical tests and yet feels that many of the tests mentioned in this book must be used clinically pending the establishment of their validity. One wonders what 20 additional years will bring.

In the first part of the book the author asserts that expressive behavior reveals personality. He feels that expressive techniques are particularly valuable and that their application results in the uncovering of more primitive traits and the tapping of deeper levels of the personality. These points are documented by well-chosen illustrations. In discussing art and expressive behavior, Hammer rises to virtually lyrical heights in rationalizing various types of data so as to demonstrate the basic consistency of personality functioning. Evidence here is considered by means of the criterion of internal consistency. Discussing the matter of evidence, the author refers to such phenomena as "symbolic flow," "therapist's ratings" "empirical evidence" and last but not least "experimental studies." It is interesting that the author here mentions that art training has no effect upon the predictive efficiency of drawings, despite some of the recent studies revealing indications to the contrary.

In the second part of the book, in many ways the most interesting, the expressive component of drawings is discussed. The assumption here is that "The muscles don't lie." While convinced of the truth of this assumption, the reviewer wonders if it is always possible to understand their story. Interpretative clues according to the author, are rendered by the sequence of movements, the size of figures, the pressure on the paper, the direction of the stroke, the kind of detailing, the placement on the page, and the type of motion employed. Apparently all of these criteria can give information about the nature of the person's difficulties, but what of the probable behavior of normal well-adjusted individuals about which no mention is made? Sidney Levy, in his contribution to this section, cautions the reader that projective drawings may mislead the "unawary, naive, reckless, and impulsive", a comment which includes many of us. Levy brings in the concept of overdetermination and discusses the process of clinical interpretation quite intelligibly. His illustrations are quite clear-cut and tend naturally to support the points made. He speaks of "social stereotypes" instead of universal symbols, which seems to make this phenomenon considerably more acceptable. But, he, too, fails us by not discussing assets or adjustment in terms of clinical drawing interpretation.

The House-Tree-Person technique is discussed mainly in symbolic terms. The drawings are presumed to tap such a vast array of areas that the reader is bewildered as to how to choose among them. Hammer starts at the roof of the house and goes down to the stoop. He starts at the crown of the tree and goes down to the roots. He hypothesizes some particular symbolic significance for every part of every drawing. He then discusses the chromatic House-Tree-Person test on the assumption that this technique is at the level of the *real* unconscious, contending that it is useful for diagnosing schizophrenia. This reviewer is led to wonder how to go about tapping the unconscious, which is rather irregular and confused in anyone, and then in turn make a prediction that the individual in question is schizophrenic. It is like saying that if people tell rather weird and fantastic stories to cards XI and XIX on the Thematic Apperception Test, then they are likely to be schizophrenic, ignoring the fact that this stimulus itself is structured along unrealistic lines. It happens that the references given in this chapter to research findings turn out upon further inspection to be theoretical articles.

The reader is now exposed to the Levy Animal-Drawing-Story Test which is a combination drawing-thematic technique and seems to elicit rather interesting results. He is told by Kinget about the Drawing-Completion Test in which Gestalt principles are used to predict structural aspects of the personality organization. Her approach seems interesting and potentially worthwhile. Harrower describes the Most Unpleasant Concept Test which she has given to some 1000 normal and abnormal subjects. This test requires one to draw, schematize, or symbolize the most unpleasant concept he can think of and associate to it. The suggested breakdown is very clever and imaginative. The reader is also briefly familiarized with the Draw-A-Family Test, Draw-a-Person-in-the-Rain Test, the Rosenberg Draw-a-Person Test, the 8-Figure Redrawing Test, and the Hammer Draw-a-Member - of - a - Minority technique. The implication of all this seems to be that you can ask people to draw almost anything and then speculate as to the meaning as far as their personality organization is concerned.

Scattered throughout the first 600 pages of the book are case studies by various and sundry people. These are all very interesting and worth-while as long as the reader heeds the injunction given by the author to refrain from using the interpretative suggestions in a "cook-book" fashion. It is to be hoped that this admonition will be taken seriously. The various psychologists seem to differ in their approaches, from the rather cautious and circumspect method suggested by Kinget to the strictly free-associative psychoanalytic approach of Hammer.

A chapter on research and clinical studies emerges relatively late, and deals with the matter of reliability and validity. A review of the pertinent findings seems to indicate moderate reliability of some aspects of drawings. As to validity, positive data seem to be considered much more valuable than negative data. It is assumed by Heidgard that negative findings are the result of either poor design or inadequate conceptualization. The reviewer is left with the conviction that expressive behavior is determined, meaningful, and consistent, but is not certain as to its special value in prediction. This question of special value is presumably taken up in the last section of the book which deals with the application of drawings to therapy and with their unique contribution to the test battery. Art therapy as discussed by Naumburg is a procedure in which the productions, the associations to them, and the transference relationship are combined for therapeutic purposes. In illustration, a schizophrenic patient is encouraged to symbolize freely, the implication being that schizophrenics need to share their fantasy, which is sometimes better accomplished non-verbally.

Hammer devotes a chapter to the well-known observation that the doodles made by a patient during therapy may be significant. Bender and Schilder have a chapter presumably illustrating that psychiatrists also know how to make use of projective drawings. Landisberg and Shneidman compare drawings with the Rorschach and TAT, respectively, and feel that drawings can contribute some interpretations similar to the other tests and some that are unique.

The concluding section contains many cautions which might well have been mentioned earlier, especially those relating to the necessity for multi-level assessment of personality and the fact that different levels may have negative correlations within an individual. It is correctly pointed out that projective drawings have certain special advantages including their use with children, their lack of verbal emphasis, their imperviousness to distortion by psychological defenses, their less-structured nature, their usefulness as a group test, and the ease of time-sampling.

This book should find a place in the library of every clinical psychologist. As a casebook governing the clinical use of projective drawings it has no equal. From a scientific view it seems rather unnecessarily defensive and pretentious. Presentation of the many excellent cases here would seem to be sufficient *raison d'etre,* without the quasi-scientific sections interlarded throughout. There is no question that expressive techniques are an important adjunct of clinical assessment and that drawings are useful in this regard. Whether the clinical utility of this approach will stand the test of time is difficult to tell before reading this book, and it is just as difficult afterwards.

WALTER G. KLOPFER
University of Portland

Nel, B. F. and Robbertse, P. M. *'n inleiding tot die Rorschach-inkvlektoets.* Amsterdam: Swets & Zeitlinger. (Undated).

This Rorschach manual, growing out of the authors' experiences with the Rorschach method in South Africa, appears to be the first text in Dutch. The publication date is not given, but the preface carries the date of 1954.

The authors present the Rorschach in the conventional sequence of administration, scoring, general meaning of scores and ratios, and sample protocols. While the scoring methods of several experts are presented, Klopfer's is promulgated along with an adaptation of the Klopfer-Davidson Record Blank.

There is little in the way of guides and scoring samples, little of the conventional diagnostic lore and little case material of a nature to communicate the range and utility of Rorschach diagnostic possibilities. Matters of reliability, validity or experimental findings are not discussed.

As an introductory manual for students whose linguistic skills are limited to Dutch, it would not provide enough background for the administration of a dependably scorable protocol nor for scoring a well-administered one. It certainly would provide a clinical novitiate with little sophistication for interpreting a protocol. It may be that the authors have another volume up their sleeves which would supply the information lacking in this volume. Or they may have intended it as a syllabus for a college course to be supplemented by lecture material. In either of these cases the book's limitations would be less serious.

There are 43 references to some of the major American and Europeans sources of Rorschach theory and practice, the latest being Hertz' 1951 frequency tables.

The reviewer has the impression that the authors may have struggled heroically with handicaps imposed by limited library resources which they used as well as they could be expected to.

BERTRAM R. FORER
Los Angeles

Zucker, Luise J. *Ego Structure in Paranoid Schizophrenia,* Springfield, Ill.: Chas. C. Thomas, 1958, p.p. x - 186.

In keeping with the growing trend toward better understanding of ego structure in paranoid schizophrenia, this book renders a valuable service. It is the *ambulatory* schizophrenic who is the prime subject of interest.

The purpose of the investigation, as stated by the author, "is to gain deepened insight into the personality dynamics of the *ambulatory* schizophrenic patient, and to provide the groundwork for prognosticating the course of his illness within a theory of the loss of ego boundaries." The Rorschach, Mosaic and Figure Drawing Tests were selected to explore the intensity and quality of ego boundary disturbances in three types of paranoid schizophrenic patients:

(1) those who had been hospitalized; (2) those who could be maintained in treatment without hospitalization; and (3) those who had begun therapy on an ambulatory basis but had eventually to be hospitalized.

To assess the fluidity of ego boundaries as a pathological phenomenon, the test materials from all three projective devices were scrutinized from the point of view of five dimensions:

1. Contamination

2. Fluidity of contours
3. Extension of ego field
4. Absence or overemphasis on main Fc scores and
5. The disturbed body image.

This new approach combined with the analysis of the projective material along the usual basic principles offers, according to the author's statistical data, a highly reliable technique in differential diagnosis in terms of the aforementioned three types of schizophrenic patients. In addition, it is said to help distinguish between the more benign and the malignant schizophrenic processes and to determine the extent of ego impairment in dormant schizophrenic conditions. In short, these newly found selective criteria should enable the diagnostician to forecast in schizophrenia. This, in turn, would enable the clinician to be more effective in the selection of patients for treatment and in the differentiation between those ambulatory schizophrenic subjects who will respond to therapy on an outpatient level and the ambulatory patient who will ultimately need hospitalization.

In reading this study one can safely say that the author has done her part in bringing some clarification to the complex problems of "measuring" the fluidity and the loss of ego boundaries. Her rationale and the techniques and concepts used in the investigation appear to be sound and the material is well organized and clearly presented. However much additional research is needed to test the validity of the findings of the present investigation.

The psychologists who are likely to profit most from this and similar studies will be those who have never been solely satisfied with the "sign" technique in projective testing but who recognize the need for a "Gestalt" approach, hence "the importance of a single finding or a dimension can be assessed only if it is seen within the context of the whole of which it is a part."

Vita S. Sommers
931 So. Windsor Blvd.
Los Angeles 19, California

ANNOUNCEMENTS

ANNUAL REPORTS

COMMITTEE ON TRAINING

The committee on Training formally met twice this year in New York City. Formal minutes are submitted along with the annual report. The chief activities of the committee were as follows:

(1) *The Survey of the Status of Projective Techniques in the American Psychological Association.* Approved Clinical Psychology Doctoral Programs began in 1956 and this year were evaluated in detail, qualitatively and quantitatively. The results were staggering in their details and in their consequences. Basically, there was luke warm cooperation by the universities, colored by a good deal of defensiveness and irritability in revealing their programs. The chief finding was the tremendous variability between these A.P.A. approved programs. For instance, class hours in projective techniques range all the way from 1 hour to 500 hours; in practicum hours from ½ to 200 hours, no practicum at all to 3 years practicum. As mentioned in last year's report, an important point deals with the philosophy of training, namely, whether techniques should be taught at all in the University or whether it is a function of the internship.

One item is especially noteworthy, namely that out of 99 teachers of projectives in 45 A.P.A. approved Universities, 82 of these teachers are *not* members of the Society of Projective Techniques. Out of the 17 members of the Society, only 9 are fellows.

The formal analysis and summary of data is submitted along with the annual report.

(2) *Post-Doctoral Institute.* Last year the Committee on Training discussed the possibility of arranging a Post-Doctoral Institute in collaboration with Division 12 of A.P.A. This year, this recommendation was actively carried out and such an institute was organized with the proper Division 12 Committee. Dr. Martin Mayman of Menninger Clinic is the speaker, the topic stated as "Analysis of the Inference Process in Projective Test Interpretation; A Topographic Study of the "Depth" of an Interpretation."

(3) *Fellowship in the Society for Projective Techniques as a Requirement for Teaching Projective Techniques.* A recommendation made at the 1957 Business Meeting was that instructors of projective techniques in Universities be required to hold fellowship in the Society for Projective Techniques. In view of the tenor of the answers in the survey (see #1) and in view of the fact that there is a serious question as to whether the Society for Projective Techniques should act as an accrediting body, it is suggested that this recommendation be given further study.

(4) *Sponsorship, Encouragement of Workshop, Institutes by the Committee on Training.* This topic was rich in suggestions and plans, generally summarized as follows. The committee feels such institutes are important especially for those who are in areas where lectures and workshops are at a minimum. One suggestion was that there should be a nucleus of people to meet and discuss training programs and to encourage workshops. This may be done locally or with regional committee chairmen and with the universities that did respond to our initial survey. It was also suggested that we obtain a list of available people who would hold workshops if asked. Therefore, we would draw from our own membership and use anyone well qualified to teach from anywhere in the United States.

(5) *Mail Consultation Service.* The committee has discussed an idea concerning a consultation service where people in areas without adequate supervision could send their cases, namely, the test results and the report itself, to certain psychologists in the field who are willing to serve as experts. The consultants could propose themselves in two categories: 1) those willing to assist in diagnosis only, and 2) those willing to offer technical suggestions to the young examiner. The consultants should further specify the tests and types of problem on which they feel "expert." They should be free to reject any case inadequately presented, or refer the examiner to a member of group 2) for suggestions on improving his techniques. Some examiners might be urged to attend regional workshops.

The role of our committee would be a) to pass upon the competence of the consultants and organize the listing of an up-to-date pool in every issue of the Journal, b) to delineate minimal criteria for the presentation of test and clinical data, c) to establish a moderate, flat fee for the service.

Recommendations:

Topic (1) Pursue and elaborate upon the original survey, discussing ways that the survey might be used to improve training in projective techniques. Consider a survey of A.P.A. approved internship agencies to evaluate, from their point of view, how well their interns are trained now, whether there has been any change in the quality of training in projectives and ask for their recommendations.

Topic (2) Conduct another Post-Doctoral Institute specifically on the Supervision of Projective Techniques, e.g. the techniques of supervising and interpretation, report writing, etc. This institute should be held specifically for pre and post-doctoral interns and residents and for university teachers.

Topic (3) The requirement of fellowship in Society for Projective Techniques for teachers of projective techniques be held in abeyance and referred back to the committee for further study.

Topic (4) Institutes and workshops in projectives be actively organized and expanded via local and regional groups, in and out of the Society of Projective Techniques.

Topic (5) The Mail Consultation Service be further investigated, organized and a trial period be delineated.

For the Committee on Training,

Doctors:
SAMUEL BECK
WALTER KASS
LEONARD KRASNER
RUTH LEHRER
FRANKLIN R. MCDONALD
EARL S. TAULBEE
ABRAHAM M. ZEICHNER
MICHAEL FINN
RUTH MUNROE
Co-Chairmen

ADDENDUM TO TREASURER'S REPORT FOR 1957

JANUARY 1, 1958 to JULY 31, 1958

Balance in Bank of Manhattan and the Long Island Trust Company—December 31, 1957	$6,538.89
Less outstanding checks on December 31, 1957	2,030.45
Balance as of December 31, 1957	4,508.44
Deposits from January 1, 1958 to July 31, 1958	10,421.88
Total Cash to be accounted for	14,930.32
Disbursements January 1, 1958 to July 31, 1958	8,196.12
Bank Balance July 31, 1958	6,734.20
Less outstanding check on July 31, 1958	5.61
TOTAL BALANCE JULY 31, 1958	$6,728.59

This report culminates five years as Treasurer for the present incumbent. Upon taking office in September 1953, the treasury of the Society was $6,965.22. The treasury as of today is $6,728.59, or $236.63 more than today. During these years the budget for the Journal has been increased by $2,000 a year to partially account for the increase in costs of publication (the Editors have also accomplished miracles in keeping costs down); and the travel expenses for the Board have increased considerably because of national board representation. The Society, however, has weathered these increases rather well, even with the frequent dire predictions of the Treasurer and the Finance Committee concerning the effect of the narrow margin of operating surplus. As of 1959 a slight dues and subscription increase takes effect but this will not mean any substantial increase in the Society's reserve.

With this report the Treasurer tenders his resignation since it has been his good fortune to be elected as President-elect of the Society. I would strongly recommend the appointment of Dr. Harry V. McNeill as Treasurer. Dr. McNeill has been a competent Chairman of the Finance Committee over the past several years, which followed a long dedicated service to the Society.

My resignation as Treasurer and my assuming the position of President-elect will be much the easier with Dr. McNeill as a Board colleague.

I appreciate the trust and honor the Society has shown me by election and re-election as Treasurer. It has been an exciting adventure to serve.

Sincerely,
GORDON F. DERNER, PH.D.
Treasurer

FINANCE COMMITTEE REPORT

The Finance Committee has one crucial meeting a year, just before the mid-winter meeting of the Board of Trustees and immediately after the returns to the billings sent to the membership in December have begun to come in in representative number. This gives an opportunity for a valid assessment of the financial health of the Society. As of the last meeting of the Finance Committee, the Society was in good health, with no fat but not underweight either.

The Board of Trustees raised the dues at its last meeting — Associate from $7.00 to $7.50 and Fellow from $10.00 to $12.00. This will take effect January next and hopefully will add resources and vigor to the Society.

The Finance Committee will again take a hard look at the fiscal state of the Society next mid-winter and try to make recommendations that will keep the Society solvent and healthy.

Respectfully submitted,
Mildred R. Bernstein
Gordon F. Derner
Ex-Officio member
Bertram R. Forer
Ex-Officio member
Jack T. Huber
Harry V. McNeill
Chairman

ANNUAL REPORT OF THE MEMBERSHIP COMMITTEE

AUGUST 1958

During the fiscal year 1957-1958, 74 applications have been handled by the Membership Committee. This has included 9 Fellowship applications that have been accepted and 1 that has been rejected; there have been 40 associate applications accepted and 7 rejected. In addition, there have been 2 student affiliate applications accepted and 1 rejected. One affiliate application has been accepted. Processing remains to be completed on 13 additional applications.

We would like to thank all of the members of the Society for their cooperation, especially those who have served as sponsors and are responsible for the continuing growth of the Society.

Respectfully submitted,
Lloyd Borstelmen
Blossom T. Wigdor
Gertrude Baker
Pauline G. Vorhaus
Gordon T. Filmer-Bennett
Walter G. Klopfer
Chairman

COMMITTEE ON REGIONAL DIVISIONS

Committee representation for 1957-58 has been as follows:

Chairman: Herbert Dorken (1958), Ottawa, Canada

Eastern: Arthur C. Carr (1960), New York, New York

Southeastern: Robert M. Hughes (1958), Atlanta, Ga.

Midwestern: Paul R. Dingman (1960), Des Moines, Iowa

Southwestern: Austin Foster (1958), Galveston, Texas

Rocky Mountain: Lawrence S. Regers, (1960), Denver, Colo.

Western: Christine Miller (1960), Berkeley, Cal.

Canadian: Ernest G. Poser, (1958), Montreal, Canada

There are now only five local groups of the Society. Despite concerted attempts over a two year period no new groups were created, one became defunct (the Montreal Group) and the response from psychologists in population centers without a local group has been uniformly negative.

New York Chapter: Maintains an annual all day conference and co-sponsors specialized postgraduate training. They have a wide mailing list and charge a registration fee to those attending their sessions.

Executive: Pres., Dr. Samuel B. Kutash, Sec., Mrs. Janet Ginandes (1150 Fifth Ave., N.Y.C.); Exec. Com., Drs. Theodora M. Abel and Emanuel K. Schwartz.

Program: Drs. Theodora M. Abel and Luise Zucker conducted a four session course jointly sponsored with the Postgraduate Center for Psychotherapy on the Mosaic Test. The annual meeting of the Chapter was held May 17 and the subject of this all day conference was: "Relative Importance of Content and Determinants in Rorschach Psychodiagnosis." Dr. Kutash chaired the meeting; speakers were: Drs. Fred Brown, David Shapiro, Zygmont Piotrowski and J. Richard Wittenborn.

Philadelphia Chapter: maintains an active monthly program from November to April. Of the 50 members in the Philadelphia area who are eligible for membership, approximately 20 are active in the local chapter. Meetings are open to non-members as well as members and the meetings are widely publicized at universities and institutions in the area. Local dues for members are $3.00. Fees are charged for lectures, seminars and per session of a seminar the schedule for guests and members being $2.00, $10.00 and $3.50, and N/C, $5.00 and $2.00, respectively.

Executive: Pres., Dr. Jules C. Abrams; Sec. Treas., Dr. Stanton B. Felzer (Eastern, Pa. Psychiat. Institute, Henry Ave. and Abbottsford Road, Phila., 29.)

Program: Nov. '57, Research Methodology in the Institute for Direct Analysis — Dr. Albert E. Scheflin, Dec. '57, Evaluation of Ego Strengths and Weaknesses (3 sessions)

— Dr. Samuel B. Kutash. January, 1958, Psychotic Disorders in Children — Dr. J. Clifford Scott. February, 1958, The House-Tree-Person Technique: Its use in personality evaluation, treatment, planning and assessment (two sessions) — Selma Landisberg. March. 1958, (No title reported) — Dr. Zygmunt A. Piotrowski. April, 1958, Analysis of Ego Strength in the Thematic Apperception Test (two sessions) Dr. William E. Henry. All meetings were held at the Eastern Pennsylvania Psychiatric Institute.

Michigan Society: (Detroit): no report.

Northern California Division (San Francisco): last year's program was reported as limited. There are currently about 40 active members and in addition some 50-odd who attend meetings. These are open to psychologists and members of allied professions as well as graduate students. No admission is charged, but once a year voluntary donations are received from members to defray the costs of mailing and announcements.

Executive: Chmn., temporarily vacant; Sec. Treas.: Dr. Jack Blumenkrantz (Psychology Section, V.A. Hospital, 42nd Ave. and Clement St., San Francisco 21); Exec. Com., Drs. Betty Kalis, Christine Miller, Lucy Rau and Wirt Wolff.

Program: May, 1957, Ego-identity and High Blood Pressure in College Women—Drs. Robert Harris and Betty Kalis. February, 1958, The Briggs-Meyer Type Indicator—Dr. Bruno Klopfer.

Southern California Division (Los Angeles: Only one meeting was held last year. Due to the election of an entirely new executive and other problems there has been a lack of continuity and stability within the group. A questionaire was sent to the 72 members soliciting program suggestions and though, "This group has practically died we are trying to revive it." The response has been encouraging.

Executive: Pres.: Mrs. Jeanne M. Reitzell; Pres.-Elect: Dr. Hedda Bolgar; Sec. Treas.: Dr. James M. Holt (Orthopaedic Hospital, 2400 So. Flower St., Los Angeles 7).

Program: June '58. Ego Functions and Projective Techniques — Drs. Rudolph Ekstein, Mortimer Meyer, Evelyn Crumpton and Norman Farberow.

While projective techniques are very much in evidence at state and regional meetings and at university training programs and there are occasions when the Society can facilitate their progress and development in these areas, it appears that interest and use is now so widespread that prompting or encouragement is generally no longer needed.

The Eastern representative sent the statement of membership requirements along with application forms to the chairman of all A.P.A. approved clinical training programs in his region. The Rocky Mountain representative has made efforts to recruit new members during state regional meetings. He also reports that there has been a considerable interest in projective techniques on the part of the school psychologists.

A review of the activities of Local Groups and the Regional Representatives, of opinions expressed by numerous psychologists and psychiatrists in both the U.S. and Canada, and of the general expansion in the utilization of projective techniques almost forces a recognition that it is time for the Society to reorganize its committee structure. Specifically, I would like to suggest that the Committee on Regional Divisions be merged into the Membership Committee by incorporating the principle of regional representation into the latter's structure.

Actually, there has been some overlap and exchange of members between these two committees in the past and such an organization would be more efficient and would avoid duplication of effort. Committee members might then have a three phase role arranging for programming of P.T. presentations at regional meetings of various associations: encouraging new applications for memberships by contact with training centers, members of other associations and selected individuals; and finally, reviewing applications for membership. The growth of the Institute from a restricted interest group to a Society of international standing is the heartening fact which underlies this recommendation.

Herbert Dorken, Ph.D.
Chairman

COMMITTEE ON NOMINATIONS

As usual, four members of the Board of Trustees were up for election this year: President-Elect, Secretary, Eastern Representative, and Executive Editor.

Also as previously, the members of the Nominating Committee were widely dispersed geographically and had to rely completely on communication by mail. This increased somewhat the technical burden on the members of the committee, but otherwise it did not seem to be a severe handicap.

Membership participation in suggesting nominees for the various offices was again a major goal of the committee. Early in the year a letter to the membership to accompany the nominating ballot was drafted, with the help of two memos to the members of the Nominating Committee of February 11th and March 1st, and the text of this letter was agreed upon (see Enclosure 1). At the same time, an Interim Report of the Nominating Committee was sent to the midyear meeting of the Board of Trustees for their consideration (see Enclosure 2).

The result of these efforts, supported furthermore by communications of the President and the Secretary to the membership, were quite satisfactory. These results were communicated to the members of the Nominating Committee in an Interim Report of May 16, 1958, supplemented by a memo of May 19, 1958, and were summarized in a communication to the membership mailed together with the election ballot (see Enclosure 3).

On June 24, 1958, a memo was sent to the Board of Trustees and the members of the Nominating Committee with the final tabulation of the 1958 election ballot (see Enclosure 4). Since this tabulation, six more ballots were returned after the deadline, bringing the total received to 415; these, however, would in no way have changed the results. Unfortunately the leading candidate for President-Elect was forced by circumstances beyond his control to decline the office after accepting the nomination; therefore this office went to the next leading candidate.

The final tabulation resulted in the election of the following slate of officers:

President-Elect	Gordon Derner
Secretary (2 years)	Helen Davidson
Eastern Representative (2 years)	Ruth Munroe
Executive Editor (3 years)	Bertram Forer

Some of the issues discussed in the 1957 Annual Report of the Nominating Committee are referred to in the enclosed documents. They were further discussed in two personal meetings between the Chairman of the Nominating Committee and the Chairman of the Ad Hoc Committee for these issues, Dr. John Bell. Dr. Bell suggested that the Nominating Committee for the current year should proceed as planned in order to give his Ad Hoc Committee additional opportunity to collect information and opinions.

The Nominating Committee wants to express its appreciation to all officers and members who contributed to the nominations and elections, which resulted in a new record participation of the membership.

Samuel B. Kutash
Paul W. Penningroth
Albert I. Rabin
Lawrence S. Regers
Bruno Klopfer
Chairman

INTERNATIONAL COMMITTEE

1. On the initiative of the SPT Committee, the APA Committee on International Relations scheduled an Open Discussion Period at this year's Convention for the purpose of exploring and integrating joint activities by related groups and organizations interested in facilitating international exchanges. The SPT Committee handled the necessary arrangements.

2. At the request of the APA International Committee and the APA Board of Directors, your Co-chairman organized the first APA sponsored Tea and Coffee Hour for Visiting Foreign Psychologists, at 4 P.M., Friday, August 29th, in the New York Room of the Hotel Statler.

3. At the request of the editors of *Progress in Clinical Psychology*, Committee members joined in preparing a chapter on "Clinical Psychology in Other Lands" for Volume III of this series.

4. Robert Holt was the Society and Committee Representative to the International Rorschach meetings and Marvin Webb Representative to the International Szondi Symposium.

5. During the coming year the Committee will endeavor to continue its activities of facilitating international communication among psychologists sharing the Society's interests.

Respectfully submitted.

Theodora Alcock
Abraham Elizur
Pearl Greenberg
Wilson Evertin

Henry P. David
William Henry
Co-chairmen

EDITORIAL COMMITTEE

The current year has seen the continuation of a trend started last year. We are receiving a goodly number of manuscripts of fine quality. This year will set a record. By the end of July we had received almost double the number of offerings received in recent years. This is a comforting state of affairs to an editor who must have manuscripts on hand when the printer is ready for them. Since the Board of Trustees has voted the Journal an increase in its budget, we can expand flexibly to take care of backlogs thru the addition of 60 pages or so when it seems appropriate.

The new rates will go into effect this winter and will bring in additional revenue even without the addition of new subscriptions which will be available to APA members at the old rate.

We are receiving many more papers from foreign countries and learn of burgeoning activities in projective psychology around the world. Kataguchi's book on the Rorschach in Japan has gone into its third edition. He has also edited and produced the first issue of a new periodical: Rorschachiana Japonica, with a forward by Bruno Klopfer. We have seen a manuscript on a T A T adaptation for India and are finding abstracts of the Journal's contents in several foreign journals.

The special issue on the T A T which was produced in honor of Henry Murray seems to have been a success. Dr. Murray has been most gracious in his appreciation.

The change in postage rates has some positive features for us in that our postage costs for manuscripts will be drastically reduced.

Our staff editors continue to perform heroic chores of evaluating manuscripts, proofreading of galleys and handling numerous details that have to do with liaison with printers, billing, corresponding with authors, and the like.

In summary, the Journal seems to be going along well with no indications of serious problems in any area.

Respectfully submitted,
BERTRAM R. FORER
Executive Editor

RESEARCH COMMITTEE

The President initially posed this charge for the Research Committee: "A research registry (as part of the Research Committee) whose function will be: (a) To advise on Ph.D. theses, when requested to do so, (b) to integrate related material and (c) to stimulate research in needed areas of projective techniques."

The Co-Chairman communicated with members of the Research Committee with regard to this charge and correspondence among the members led to the following considerations: (a) *To advise on Ph.D. theses* – There was the feeling expressed that the function of a committee of a Society such as ours should generally be *not* to advise but to refer. As one committee member put it, "I think we might serve as an agency or intermediary through which people who want advice and people who are willing and able to provide it can be gotten together." The committee consensus seems to be that the committee should not involve itself in active propagandizing or proselytizing with regard to its advisory role in research, but rather should be available to handle spontaneous inquiries concerning projective methods which may be directed to the Society at large or to the committee specifically. (b) *To integrate related materials* – The committee is of the opinion that such integration would be a major undertaking and one which the Research Committee could only manage by arranging to sponsor rather than actively taking on the responsibility. The problem, which the committee only tangentially grappled with, is how to locate and recruit individuals who would be willing to take on certain aspects of integrating areas of projective techniques for purposes of assessing the status of research in these areas. (c) *Stimulating research in needed areas* – It was recognized that this is a very complicated matter since the involvement in research is more likely to reflect individual interest than any organizational attempt to structure research goals. However, the two Co-Chairmen spent one day actively exploring the possibility of a series of annual conferences devoted to specific aspects of problems in the area of research with projective techniques that could each year become the focus for a series of prepared papers and active discussion leading to publication for the benefit of the profession at large. The Co-Chairmen have agreed that one of the most important areas that should be the focus of concerted thinking that will ultimately be rewarded by meaningful research with projective techniques is an attempt to systematically relate psychological theory and projective techniques to the end that projective methods may extend their theoretical roots to the benefit of both psychological theory and projective methods. The Co-Chairmen are proposing that the conference for the first year be devoted to an attempt systematically to relate perception theory in all of its aspects to projective methods because of the pertinency of perception as a process to projective test performance. As mentioned earlier, the proposal is that subsequent years be devoted to central topics such as psychoanalytic theory and projective techniques, psychology of thinking and projective techniques, learning theory and projective techniques, sociological and anthropological theory and projective techniques, quantitative theory and projective techniques, motivational theory and projective techniques, communications theory and projective techniques, etc. Over the years this will tend to accumulate a significant theoretical literature which could become the basis for systematic research relative to projective techniques. The Society would thus undertake sponsorship for annual conferences similar to the Nebraska symposia on motivation which have now been going for several years.

The Co-Chairmen are in agreement that such a series of annual conferences should consist of papers prepared by invited participants, with the papers serving as the basis for an active discussion by a small group of highly selected participants who are capable of rendering a significant contribution to the particular focus for the conference. The proceedings of such conferences, including the papers, the discussion, and an integrative summary should be published and made available to members of the profession.

It is proposed that the first such conference, to be held at a time during the year when it would not conflict with other major professional activities, be held during the spring of 1959 at a place that would be sufficiently attractive to make it interesting for participants to want to attend. Since the United States Public Health Service has recently sponsored a three-day conference on research in psychotherapy, it has seemed appropriate to explore this channel for the financial support that would provide honoraria for those who prepare formal papers and to make available per diem and travel expenses for the small group of individuals who would be assembled to thrash out the focus of the problems.

It is proposed that the Society for Projective Techniques be the active sponsor of such a series of conferences, but that the Research Committee be charged with the responsibility of planning each year's conference sufficiently in advance in order to provide for the appropriate support.

It is immediately proposed that the Society for Projective Techniques approve the Research Committee embarking on the first of such a series of annual conferences on psychological theory and projective techniques to be held in the spring under a grant to be requested from the United States Public Health Service.

In the event that a grant cannot be made available, it is proposed that the Research Committee be charged with holding a meeting in conjunction with some sponsoring university or hospital in order to make possible the presentation of a series of papers related to the area of perception and projective techniques for the year 1960.

For the Research Committee,

Leonard Eron
Ralph Gundlach
(resigned)
David Shapiro
Edith Weisskopf-Joelson
Abraham Zeichner
Jules D. Holzberg
Herman Molish
Co-Chairmen

The Council of Psychoanalytic Psychotherapists, Inc. held a membership meeting and symposium at the Carnegie Endowment for International Peace, United Nations Plaza at 46th Street, New York City, on Saturday, November 8, 1958. The topic of the symposium was "Termination in Psychoanalysis." A paper, "On Termination," was prepared by the Education Committee and presented by Rudolph Wittenberg. Participants in the symposium were Dr. Richard Sterba and Dr. Leon Goldensohn.

The Council is a national organization whose purpose is to join in one group psychoanalysts and psychotherapists coming from different disciplines and having varying theoretic orientations in the field of human behavior.

WORKSHOPS

Department of Psychology
The University of Chicago
SUMMER 1959

TWO WORKSHOP SEMINARS IN THE RORSCHACH TEST

I. The Foundations. Technique of administering, demonstrated. Scoring: normative approaches. Psychologic significance of the test variables. Interpretation: the personality as developed out of whole test records. July 6-10, 1959.

II. Advanced Clinical Interpretation. Differential test patterns in a variety of maladjustments. Accent in this year's workshop will be on the ego's defenses, and the patients' pathologic solutions. Treatment implications: in adults and in children. July 13-17, 1959.

Doctor S. J. Beck will conduct both seminars. For information write to: Rorschach Workshops, Department of Psychology, The University of Chicago, Chicago 37, Ill.

Asilomar Conference Grounds, Pacific Grove, California, will be the scene of a July conference course which University of California Extension will hold for teachers and supervisors in graduate departments of clinical psychology and in residency or internship training centers.

"Introduction to Analytical Psychology for Clinicians" is the title of the course for which the doctorate or master's degree or equivalent in professional experience and the consent of the staff is prerequisite. The course carries two units of upper division credit.

Aimed primarily at teachers and supervisors who want to include competent information about the Jungian approach to clinical work in their program, the conference will not form part of a training program for Jungian analysts or research workers. It will serve as an introduction which should provide the kind of information which cannot be acquired through reading alone, according to Bruno Klopfer, clinical professor of psychology at UCLA, who will serve as coordinator. Staff members will also include Rivkah Kluger, analytical psychologist and member of the staff of the C. G. Jung Institute in Zurich; John Perry, assistant clinical professor of psychiatry, University of California, San Francisco; and Marvin Spiegelman, analytical psychologist.

At the conference, which begins with the evening meal on Sunday, July 12, and ends with the noon meal on Friday, July 24, all students will participate in three seminars of twenty hours each.

Brochures containing application blanks and information on housing, study programs and other details are available on request to University of California Extension, Los Angeles 24. Enrollees will be selected in the order in which applications are received. The registration fee is $130, payable after notification of acceptance.

The Asilomar Conference Grounds are located on the tip of the Monterey peninsula, approximately five miles from Monterey, ten miles from Carmel and 120 miles from San Francisco. Nearby attractions include the famous 17-mile drive, Point Lobos Reserve State Park and scenic Highway No. 1.

THE WESTERN RESERVE UNIVERSITY

1959 Summer Session

Technique Courses

Dates: June 22nd-August 1st, 1959

Course #461—*Introduction to the Rorschach Method*

Lectures, Demonstrations in the Hospitals, supervised training periods.

Admission to qualified psychiatrists, psychologists, research workers in the fields, and to graduate students specializing in clinical psychology having a full academic year's study or the equivalent in a recognized university and with clinical or research experience in psychology, psychiatry or psychiatric social work.

Hours: Daily 11:00 A.M. - 12:20 P.M.

Course #462—*Intermediate course in the interpretation and clinical application of*

Lectures, demonstrations in the hospitals, interpretation of records of different personality groups, supervised training periods.

Admission limited to professionally trained persons in psychiatry, psychology, and psychiatric social work and to graduate students who have had experience with the Rorschach Method.

Hours: Daily 9:30 to 10:50 P.M.

Instructor: Marguerite R. Hertz, Ph. D. Clinical Professor of Psychology.

Course #464—*Measurement of Personality*

Introduction to the important tests of personality other than the Rorschach.

Hours: Daily 8:00 to 9:20 A.M.

Instructor: Robert Alvarez, Ph.D., Assistant Clinical Professor of Psychology.

Credit: Three graduate credits per course may be obtained upon registration.

Fee: $84 per course.

Application: Inquiry may be made to:

Director of Admissions
Western Reserve University
Cleveland 6, Ohio

KURT GOLDSTEIN SPECIAL ISSUE

The 80th birthday of Kurt Goldstein, last November 6, will be celebrated in the Spring, 1959, issue of the *Journal of Individual Psychology*. This special issue will include an *autobiographical statement* by Goldstein, and among other papers:

Compensation and Over-compensation in Organic Cases — Alexander Adler, M.D., New York
Phantom Limb and "Denial" — Marianne L. Simmel, VA Hosp., Durham, N.C.
A Picture Perception Test of the Abstract Attitude (with illustrations) — Leopoldo Chiappo, Univ. of San Marcos, Peru
Nerve Excitability within the Structure of the Whole — F. J. J. Buytendijk, Univ. of Utrecht

Backwards and Forward Memory — William Gooddy, M.D., London

Goethe, Color and Goldstein's Biological Approach — Norbett L. Mintz, Harvard University

Perception and Abstract Thinking: an Experiential Analysis — Martin Scheerer, University of Kansas

Phenomenal Analysis of "Really Feeling Understood" — Adrian L. Van Kaam, Brandeis University

Kurt Goldstein and the Notion of Words — R. Jakobson, Harvard University

Critique of Self-Actualization. I. Some Dangers of Being-Cognition — A. H. Maslow, Brandeis University

The Significance of Kurt Goldstein for Philosophy of Religion—Paul Tillich, Harvard University

The issue will also contain a large *portrait* of Goldstein, and his *bibliography* from 1936-1958, compiled by Joseph Meiers, M.D. and Norbett L. Mintz.

The pre-publication price of the Goldstein issue is $1.75, a 30% reduction from the regular price of $2.50. Those wishing to avail themselves of this offer, are asked to send their checks now to: *Journal of Individual Psychology*, University of Vermont, Burlington, Vermont.

BOOKS AVAILABLE FOR REVIEW

The following books are offered to prospective reviewers who are asked to communicate their willingness to the Executive Editor. We ask only that the review be completed within six weeks of receipt of the book.

Brower, D. and Abt, L. E. *Progress in clinical psychology*. Vol. III.

Harrower, Molly. *Personality change and development.*

Delay, J., Pichot, P., Lemperiere, A., and Perse, J. *The Rorschach and the epileptic personality.*

Orr, Marian. *Le test de Rorschach et l'imago maternelle.*

Revers, W. J. *Der Thematische Apperzeptionstest.*

Rey, A. *L'examen clinique en psychologie.*

Research Exchange

A Rejoinder to: "The Problem of Inter-judge Agreement and Prediction: A Contrary View

Morton Wiener
Clark University

In a recent issue of JPT, Wiener (4) discussed the problem of between-judge unreliability in clinical procedures, and concluded that this unreliability made it impossible to assess the validity of these clinical procedures. In a subsequent JPT, Nichols (3) takes issue with this point of view and maintains that efforts to achieve between-judge reliability and validity are doomed to failure and that even if such attempts were successful the value (richness and meaningfulness) of projective data would be lost.

Projective data have "richness and meaningfulness" only to the extent that they communicate information to the examiner about the subject. There is nothing in the act of making explicit the examiner's understanding of this information which decreases the richness or meaningfulness of the original data. Whether or not efforts to achieve reliability or validity is doomed to failure is still an empirical question (1, 2) and cannot be decided by fiat.

Nichols is quite correct when he states, "It is conceivable that one could obtain an internally consistent picture of the motivations and personality dynamics of a patient that is as accurate as the theory on which it is based, and still do no better than chance in predicting overt behavior because of the complexity and looseness of the relationships between our theoretical constructs and stimulus and response variables." Granted the indeterminate relationship between our theoretical constructs and overt behavior, it is still reasonable to expect that clinicians holding the same philosophical-theoretical view will develop the *same* internally consistent formulation of the motivations and the dynamics of the subject. Whether or not these internally consistent constructs are valid (i.e., relate to stimulus and response variables) is a separate and empirical issue.

Nichols' other points are most distressing and must be unequivocally rejected. He maintains that projective data are valuable because they give "understanding" to the clinician; that this "understanding" leads to self-confident, consistent and socially valuable action; and the value of projective data lies to a considerable degree in what "*they do for the examiner rather than what they tell about the subject*" (italics added). How can we know that the clinician "understands" unless and until he communicates this understanding in some form. Once he must communicate, there is the problem of between-judge reliability. Further, it is a statement of faith to assume that non-accurate (unreliable or invalid) understanding will lead to *consistent* and socially valuable action. Again, any attempt to justify clinical procedures by a statement of what they do for the examiners' security must be rejected as irrelevant and an inadequate rationalization to justify the existence of examiners. Tranquilizers may lead to this same feeling of self-confidence, and by analogy lead to socially valuable action, but do not justify the time consuming and expensive clinical procedures.

Nichols concludes that the projective tests were designed to afford a maximum amount of freedom for *both subject and examiner* (italics added) to express his individuality. Are projectives a test for the subject or the examiner? Nothing in the concept of projective testing implies that examiners of equal skill and training are not essentially interchangeable. No testing, or understanding, or anything else is possible if the tests themselves and the examiners are not considered as some form of constants.

Projective techniques appear to be highly worthwhile tools because they seem to give us richness of data about our subject. If clinicians are to be effective professionally, socially or scientifically, they must determine the best way of interpreting this richness, communicating the information derived, and then determining its relationship to observable behaviors.

References

1. Holt, R. R. Clinical and statistical prediction: a reformulation and some new data. *J. abnorm. soc. Psychol.*, 1958, *56*, 1-12.

2. Meehl, P. E. *Clinical versus statistical prediction: a theoretical analysis and a review of the evidence*. Minneapolis: University of Minnesota Press, 1954.

3. Nichols, R. C. The problem of interjudge agreement and prediction: a contrary view. *J. Proj. Tech.*, 1958, *22*, 255-257.

4. Wiener, M. The problem of interjudge agreement and prediction. *J. Proj. Tech.*, 1958, *22*, 122-124.

Comments on Nichols' and Wiener's Notes on Inter-judge Agreement and Prediction

Edith Weisskopf-Joelson
Purdue University

Wiener and Nichols seem to disagree on whether projective tests should be more than a device to give the clinician "faith in the feeling of insight and understanding of the patient (1)", a faith which might lead to "self-confident, consistent, and socially valuable action (1)". Wiener feels that projective tests are useless unless some inter-judge agreement can be obtained, and he implies, in his first paper (3) that one of the reasons why it is imperative to obtain inter-judge agreement is because there can be no validity without it.

I do not wish to comment on the desirability, nor on the possibility of establishing inter-judge reliability. But I wish to express my firm opinion that projective devices would be a fine thing even if they did nothing but "give the clinician faith in the feeling of insight and understanding". The same thing holds for various schools of psychotherapy. I believe this kind of faith is a much more potent factor than Wiener appears to assume. I perceive emotional disturbance as partially caused by lack of a consistent philosophy of life (2), or of a frame of reference which would help patients understand themselves and the world around them. If projective devices can give such a frame of reference and if this frame of reference can be transmitted to the patient, they can do quite a bit. Thus, communicability from clinician to clinician, which Wiener emphasizes, is perhaps less important than communicability from clinician to patient.

From this angle projective interpretations could be seen as something like a philosophy of life or like a "religion". Nichols' point of view (1) could then be expressed by saying that to the degree that projective data gain value as predictive tools or as measuring instruments, they lose value as frames of reference or as religions. It remains to be seen whether this is true. While using a "religion" as a measuring scale and vice versa may be a somewhat unusual procedure, we ought to keep our minds open about combining these seemingly disparate functions. May be it can be done.

References

1. Nichols, R. C. The problem of interjudge agreement and prediction: a contrary view. *J. Proj. Tech.*, 1958, *22*, 255-257.

2. Some suggestions concerning Weltanschauung and psychotherapy. *J. of abnorm. and soc. Psychol.*, 1953, *98*, 601-604.

3. Wiener, M. The problem of interjudge agreement and prediction. *J. Proj. Tech.*, 1958, *22*, 122-124.

An Empirical Approach to Problems Concerning the Diagnostic Value of a Pictureless TAT

Dell Lebo
Richmond Professional Institute

Weisskopf-Joelson (9) raised some interesting questions concerning the diagnostic value of a pictureless TAT in the December issue of the *Journal of Projective Techniques.* Among her questions were several which have been of concern to the present writer. In the belief that empirical approaches to aspects of these problems, and the partial solutions that have been afforded thus far, may be of interest to others, they are presented below.

In 1955 the present writer (1) reported that TAT pictures disliked by Florida college students were described with disquieting terms in the manual accompanying the plates. This observation led him to the thought that the original descriptions might contain approximately the same stimulus value as the cards themselves.

The accuracy of the hypothesized relationship between the stimulus value of the verbal descriptions of TAT cards and the plates themselves was later tested by Lebo and Harrigan (4). They compared protocols given to TAT cards for adult females with the responses given (by the same women) to a vocal presentation of Murray's descriptions. Protocols collected under both sets of stimuli were found to be similar. In other words the pictureless, or cardless, TAT evoked the same kinds of responses as the traditional TAT according to the measures employed. A later study recently completed, and as yet unpublished, by Lebo and Sherry revealed that a visual presentation of the descriptions yielded responses not unlike those given to a vocal presentation.

Hence, it would seem that TAT card descriptions, whether shown to the subjects (ViTAT) or read to them (VoTAT) produce much the same kind of responses as do the plates themselves. This finding is important because of its implications for ease in group testing, the collection of massive amounts of normative data, intracultural comparison, and a VoTAT for use with the blind.

The question of the theoretical implications of such research regarding the problem of stimulus ambiguity was also raised (9). This aspect of a pictureless TAT has also interested the present writer (3). Ever since Morgan and Murray first presented the TAT in 1935 modifications have stemmed largely from the original assumption "that there should be at least one person in each picture with whom the subject would easily identify himself" (5, p. 290). Empirical findings, in which Weisskopf-Joelson was a prominent participant, however, indicate, in general, that an increased similarity of picture to subject did not invariably increase the amount of projective material elicited. It has been found, for example, that the central figure does not even need to be of the same sex as the respondant (8).

Methods for increasing ambiguity in the TAT have been described in the literature (3). It has been suggested, for example, that the stimulus picture be examined only briefly, then put aside prior to responding. Actually, Lebo and his coworkers found that vocal presentations of card descriptions were nonsignificantly superior to the traditional TAT, and that visual presentations of descriptions were nonsignificantly superior to the vocal. A verbal TAT (VTAT) whether in ViTAT or VoTAT form, would seem to be a method of increasing ambiguity by eliminating the stimulus of the cards themselves. Further investigations of a VTAT seem warranted. Several of Murray's descriptions, for example, do not seem to include some of the significant aspects of the cards. The "Research Exchange" column of this *Journal* would probably be the most effective place for the dissemination of ideas concerning a verbal TAT, or other pictureless forms of the test.

Bibliography

1. Lebo, D. Immediate affective reaction to TAT cards. *J. clin. Psychol.*, 1955, *11*, 297-299.
2. Lebo, D. Scoring the verbal TAT, with illustrative protocols. Dittoed: Author. 1958.
3. Lebo, D., & Harrigan, Margaret. Increasing ambiguity in the TAT. Paper read at Southeast. Psychol. Assn., Nashville. March, 1957.
4. Lebo, D., & Harrigan, Margaret. Visual and verbal presentation of TAT stimuli. *J. consult. Psychol.*, 1957, *21*, 339-342.
5. Morgan, Christiana D., & Murray, H. A. A method for investigating fantasies. *Arch. Neur. Psychiat.*, 1935, *34*, 289-306.
6. Newbigging, P. L. Influence of a stimulus variable on stories told to certain TAT pictures. *Canad. J. Psychol.*, 1955, *9*, 195-206.
7. Stone, D. R. Responses to imagined auditory stimuli as compared to recorded sounds. *J. consult. Psychol.*, 1955, *19*, 254.
8. Weisskopf, Edith A. A transcendence index as a proposed measure in the TAT. *J. Psychol.*, 1950, *29*, 379-390.
9. Weisskopf-Joelson, Edith. Research exchange. *J. proj. Tech.*, 1957, *21*, 428.

DIRECTORY OF MEMBERS OF THE SOCIETY FOR PROJECTIVE TECHNIQUES AND RORSCHACH INSTITUTE AS OF MARCH 1, 1959

Date preceded by F indicates date elected as Fellow
Date preceded by A indicates date elected as Associate
Date preceded by St. Aff. indicates date elected as Student Affiliate
Date preceded by Aff. indicates date elected as Affiliate
Date preceded by H.M. indicates date elected as Honorary Member
Name preceded by • indicates Charter Member or Fellow

ABEL, Theodora Mead (Ph.D.)
Palisades A 1944
Rockland County, N.Y. F 1945

ABRAMS, Elias N. (Ph.D.)
178 E. 59th St.,
Brooklyn 3, New York A 1952

ABRAMS, Jules C. (Ph.D.)
1505 Paper Mill Road
Philadelphia 18, Pa. A 1955

ABRAMS, Julian (Dr.)
Psychology Department
Springfield State Hospital
Sykesville, Md. A 1954

ABRAMS, Ray H. (Ph.D.)
408 S. Lansdowne Avenue
Lansdowne, Pa. A 1950

ABRAMSON, Leonard S. (Ph.D.)
Box 185, Fort Meade A 1948
South Dakota F 1955

ABT, Lawrence Edwin (Ph.D.)
151 Rockland Avenue
Larchmont, N. Y. A 1951

ACKERMAN, Bernard R.
124 E. 91st Street
New York 28, N. Y. A 1943

ADAMS, Henry B. (Ph.D.)
McGuire VA Hospital
Richmond, Va. A 1957

AINSWORTH, Mary D. (Ph.D.)
Dept. of Psych.
Johns Hopkins Univ. A 1948
Baltimore 18, Md. F 1950

ALCOCK, Miss Theodora
Tavistock Institute of
Human Relations
2 Beaumont St., A 1950
London, W.I., England F 1953

ALEXANDER, Herbert M.
200 Southern Ave.
Ambler, Pa. A 1958

ALEXANDER, Robert H. (Ph.D.)
Department of Psychology
MacMurray College
Jacksonville, Ill. A 1950

ALEXANDER, William A.
Hawthornden State Hosp.
Macedonia, Ohio A 1955

ALLEN, Doris Twitchell (Ph.D.)
30 W. Fountain Avenue
Glendale, Ohio A 1949

ALLEN, Robert M. (Ph.D.)
Department of Psychology
University of Miami A 1949
Miami 46, Florida F 1951

•ALOZERY, Jessie Jervis (Ph.D.)
314 E. 41st St.
New York 17, N.Y. F 1940

ALTMAN, Charlotte Hall
Institute for Juvenile (Ph.D.)
Research
907 South Wolcott Avenue
Chicago 12, Ill. F 1956

AMCHIN, Abraham
8 Lyons Ave.
So. Farmingdale, N.Y. A 1952

AMES, Mrs. Louise Bates
Gesell Institute of Child
Development
310 Prospect Street
New Haven 11, Conn. A 1951

ANASTASIO, Mary M.
10 Downing Street
New York 14, N. Y. A 1952

ANDERSON, Dorothy V. (Ph.D.)
415 N. Camden Dr.
Beverly Hills, Calif. A 1953

ANDERSON, Helen Joan
Suite 829, Hotel Bossert
98 Montague Street
Brooklyn 1, N. Y. A 1949

ANTWARG, Alexander
1690 Longfellow Avenue
Bronx 60, N. Y. A 1955

APPELL, Melville J.
858 Seward Avenue
Akron 20, Ohio A 1950

ARMON, Mrs. Mary Virginia
470 W. Avenue 43
Los Angeles 65, Calif. A 1946

ARNAUD, Sara H. (Ph.D.)
Arsenal Family &
Children's Center
40th St. and Penn Ave.
Pittsburgh 24, Pa. A 1958

ARONSON, Marvin L. (Ph.D.)
225 E. 73rd Street
New York 21, N. Y. A 1951

AUERBACH, Mrs. Aline B.
440 East 56th Street
New York 22, N. Y. A 1944

AZIMA, Mrs. Fern Cramer
Allan Institute
1025 Pine Avenue W.
Montreal, P.Q., Canada A 1951

BACHRACH, Arthur J. (Ph.D.)
Div. of Behavioral Science
University of Virginia
School of Medicine A 1950
Charlottesville, Va. F 1954

BAKER, Corinne F. (Ph.D.)
1839 Farmington Road
East Cleveland 12, O. A 1943

BAKER, Gertrude (Ph.D.)
2726 Montana Avenue
Santa Monica, Calif. A 1948

BAKER, Lawrence M. (Ph.D.)
Department of Psychology
Purdue University
Lafayette, Indiana F 1956

BALKEN, Eva Ruth (Ph.D.)
133 East 58th Street
New York 22, N. Y. A 1948

BALL, Josephine (Ph.D.)
R.D. 1
Perryville, Md. A 1949

BARAHAL, George D. (Ph.D.)
Clinical and Ed. Psychology
Wayne University
Detroit 1, Mich. A 1954

BARBARA, Dr. Peter Paul
Box 31
Green Farms, Conn. A 1952

BARKLEY, Bill J. (Ph.D.)
1856 Coventry Road
Cleveland, Ohio A 1950

BARON, Louis K.
6238 N. Tenth Street
Philadelphia 41, Pa. A 1951

BARON, Samuel (Ph.D.)
310 West 86th St.
New York 24, N. Y. A 1944

BARRATT, Mrs. Emily C.
Marple Road
Broomall, Pa. A 1952

BARRELL, Robert P. (Ph.D.)
Psychology Department
Veterans Adm. Hospital
Downey, Ill. A 1952

BARRINGER, Benton E. (Ph.D.)
381 N. Main Street
Canandaigua, N. Y. A 1951

BARRY, John R. (Ph.D.)
Western Psychiatric Inst.
3811 O'Hara Street
Pittsburgh 13, Pa. A 1953

BARTLETT, Mrs. Doris A.
924 West End Avenue
New York 25, N. Y. A 1949

BAUGHMAN, Emmett Earl
Dept. of Psychology (Ph.D.)
Univ. of North Carolina
Chapel Hill, N. C. F 1957

BEALE, Elizabeth A., Ph.D.
4427½ Finley Ave.
Los Angeles 27, Calif. A 1951

BEARDSLEY, Katherine (Ph.D.)
Clinical Psychology Branch
St. Elizabeth's Hosp.
Washington 20, D.C. A 1958

BEATTY, Miss Eleanor
Child Study Inst.
Bryn Mawr College
Bryn Mawr, Pa. A 1958

BEAUCHEMIN, Jean M.
10793 Esplanade
Montreal 12, Quebec A 1952
Canada

BECK, Samuel J. (Ph.D.)
Department of Psychology
University of Chicago F 1950
Chicago 37, Ill.

BEISEL, Mrs. Lillie Burling
104 Beach Avenue A 1944
Larchmont, N. Y.

BELL, John E. (Ed.D.)
1112 Hillview Road A 1949
Park Hills F 1951
Berkeley 8, Calif.

BELLAK, Leopold (M.D.) A 1948
1160 Fifth Avenue F 1952
New York 29, N. Y.

BENJAMIN, Richard
230 W. 105th St. A 1956
New York, N. Y.

BERAN, Marianne (Ph.D.)
408 First Avenue A 1949
New York 10, N.Y.

BERGSTROM-BORLAND,
Mrs. Ingrid
1025 Las Orejas Ave.
San Rafael, Calif. A 1956

BERLINER, Anna(Ph.D.)
Pacific University
Forest Grove, Ore. A 1954

BERNSTEIN, Mrs. Hilde R.
5470 Hydepark Blvd.
Chicago 15, Ill. A 1953

BERNSTEIN, Louis (Ph.D.)
208 S. 36th St.
Philadelphia 4, Pa. A 1957

BERNSTEIN, Mrs. Mildred
498 Hempstead Ave.
Malverne, L.I., N.Y. A 1950

BERRICK, Myron E.(Ph.D.)
1086 Ocean Avenue
Brooklyn 30, N. Y. A 1955

BIELIAUSKAS, Vytautas J.
Xavier University
Cincinnati, Ohio F 1956

BILLIG, Otto(M.D.)
Department of Psychiatry
Vanderbilt University
Hospital
Nashville, Tenn. A 1941
F 1950

•BILLINGS, Edward G.(M.D.)
1820 High Street
Denver 6, Colo. F 1940

BINGHAM, Dr. David Starr
213 Crescent St.
Northampton 94, Mass.
St. Aff. 1955

BLAU, Theodore H.(Ph.D.)
420 W. Lafayette Street A 1955
Tampa, Fla. F 1956

BLESSING, Harold D.(Ph.D.)
3827 Nancy Avenue
Dunlinden Acres
Wilmington 8, Del. A 1953

BLUM, Lucille Hollander(Ph.D.)
17 W. 67th Street
New York 23, N. Y. A 1947

BLUMSTEIN, Mrs. Molly G.
5219 Wayne Avenue
Philadelphia 44, Pa. A 1948

BOGARDUS, Helen(Ed.D.)
323 14th Avenue North
Seattle 2, Wash. A 1949

BOLES, Glen (Ph.D.)
251 Central Park West
St. Aff. 1953
New York 24, N.Y. A 1957

BOLGAR, Hedda (Ph.D.)
Psychiatric and
Psychosomatic
Research Institute,
Mt. Sinai Hospital
8720 Beverly Blvd.
Los Angeles 48, Calif. F 1956

BONDEL, Gertrude (Ph.D.)
2049 McGraw Ave. St. Aff. 1953
New York 62, N. Y. A 1954

BOSNER, Mrs. Jane Potter
38 Manor Drive
Red Bank, N.J. St. Aff. 1957

BOURKE, William T.(Ph.D.)
7 E. 75th St.
New York, N.Y. A 1950

BOWDLEAR, Charles M.
VA Hospital
Sepulveda, Calif. A 1957

BOWEN, Barbara
RFD 2
Concord, N. H. A 1953

BOWERS, Scott T.(Ed.Dr.)
Dayton St. Hosp.
Dayton, Ohio A 1956

•BRADWAY, Katherine P.(Ph.D.)
41 Monte Mar Drive A 1940
Sausalito, Calif. F 1949

BRAMWELL, Paul F.
4995 Bon Air St. #3
Salt Lake City 17, Utah
A 1957

BRANDT, Rudolph J.(Ph.D.)
435 N. Roxbury Drive
Beverly Hills, Calif. A 1950

BRAUN, Mrs. Roslyn R.
170-15 Highland Avenue
Jamaica Estates 32, N.Y. A 1949

BRECHER MARER, Sylvia
4321 244th St. (Ph.D).
Douglaston, N.Y. A 1951

BRICKLIN,
Mrs. Patricia McIntosh
Reading Clinic
Department of Psychology
Temple University
Philadelphia 22, Pa. A 1958

BRODIE, Mrs. Dorothy B.
4833 Tenth Ave. N. A 1943
St. Petersburg, Fla. F 1950

BRODY, Abraham(Ph.D.)
29 Heatherbloom Road
White Plains, N. Y. A 1952

BRODY, Claire M.(Ph.D.)
73 Ivy Lane
Englewood, N. J. A 1955

BRODY, Gertrude Gillenson
29 Heatherbloom Road
White Plains, N. Y. A 1948

BROOMHEAD, Elizabeth
5350 42nd Place, N.W.
Washington 15, D. C. A 1944

•BROSIN, Henry W.(M.D.)
University of Pittsburgh
Western Psychiatric Institute
3811 O'Hara Street
Pittsburgh 13, Pa. F 1940

BROWER, Daniel(Ph.D.)
300 N. Mountain Ave. A 1943
Upper Montclair, N. J. F 1954

BROWER, Mrs. Judith F.
300 N. Mountain Avenue
Upper Montclair, N. J. A 1948

BROWN, Fred(Ph.D.)
Mt. Sinai Hospital
Fifth Ave. and 100th St. A 1948
New York, N. Y. F 1950

BROWNFAIN, John J.(Ph.D.)
21174 Greenview Ave.
Detroit 41, Mich. A 1954

BROZOVICH, Stanley M.
449 E. Pine
Altadena, Calif. A 1953

BRUCE, Martin M.(Ph.D.)
71 Hanson Lane
New Rochelle, N. Y. A 1952

BRUNSCHWIG, Lily(Ph.D.)
420 Conshohocken State
Road, Cynwyd, Pa. A 1953

BRY, Mrs. Mae G.
59 W. 12th Street
New York 11, N. Y. A 1954

BUCK, John N.
1600 Langhorne Road
Lynchburg, Va. A 1950

BUHLER, Charlotte(Ph.D.)
1127 N. Sweetzer A 1943
Los Angeles 46, Calif. F 1951

•BURCHARD, Edward M. L.
55 E. 86th Street (Ph.D).
New York 28, N. Y. F 1940

BURDICK, Mrs. Jeanne H.
2236 Edgewater Ter.
Topeka, Kans. Aff. 1957

BURGEMEISTER, Bessie B.
Neurological Institute (Ph.D.)
710 W. 168th Street A 1942
New York 32, N. Y. F 1947

BURTON, Arthur(Ph.D.)
2261 Sunnyvista Drive A 1949
San Jose 28, Calif. F 1956

CALABRESI, Renata A.(Ph.D.)
360 Central Park West A 1944
New York 25, N. Y. F 1950

CALIGOR, Leopold(Ph.D.)
175 Riverside Drive
New York 24, N.Y. A 1952

CALVERT, Margaret
Verdun Protestant Hospital
P.O. Box 6034
Montreal, Que., Can. A 1952

CAMPION, John Neil, Jr.
510 E. Magnolia Street
Stockton 4, Calif. A 1952

CANTAROW, Mrs. Elizabeth S.
2033 Delancey Street
Philadelphia 3, Pa. A 1950

CANTER, Aaron H.(Ph.D.)
2939 N. 47th Street A 1949
Phoenix, Ariz. F 1952

CAPELL, Martin D.(Ph.D.)
18258 Fremont St.
Livonia, Michigan A 1958

•CARO, Mrs. Elizabeth R.
2014 Grove Avenue
Richmond, Va. A 1940

CARPENTER, Kenneth E.
(Ph.D).
1164 Kingston Road,
Kingston, R. I. A 1953

CARR, Arthur C.(Ph.D.)
Psychiatric Institute
722 West 168th Street
New York 32, N.Y. A 1953

•CARROLL, Clara
Bureau of Child Guidance
228 East 57th Street
New York 22, N. Y. F 1940

CARSON, Marjorie
Children's Aid Soc. of
Metropolitan Toronto
33 Charles Street East
Toronto 5, Ont., Can. A 1952

CARTER, Linda Louise
1115 Wertland Street
Charlottesville, Va. A 1949

CARTWRIGHT, Robert W.
21470 Providencia Street
Woodlands Hills, (Ph.D.)
Calif. A 1952

CASSEL, Russell N.(Ed.D.)
4532 No. 53rd A 1954
Glendale, Ariz. F 1955

CEASE, Eugene
Box 234
Warren State Hospital
Warren, Pa. A 1951

CENTERS, Louise Van Core
(Ph.D.)
3676 Mandeville Canyon Rd.
Los Angeles 49, Calif. A 1958

CHAMOULOUD, Mrs. Muriel I.
The Pennington
215 E. 15th St.
New York 3, N.Y. A 1945

CHARNY, Israel W. (Ph.D.)
Oakbourne Hospital
1030 S. Concord Rd.
Chester, Pa. A 1957

CHAYKIN, Albert
Guidance Center
University of Miami
Coral Gables, Fla. A 1956

CHU, Thomas W.
770 West End Avenue
New York 25, N. Y. A 1955

CICCARELLO, Miss Jennie
Psychology Dept.
Univ. of Portland
St. Aff. 1956
Portland 3, Oregon A 1958

CLAPP, Chester D.(Ph.D.)
20921 Balfour Rd., Rt. 5
Mt. Clemens, Mich. A 1954

•CLAPP, Mrs. Hazel S.
Suite I, 1515 State St.
Santa Barbara, Calif. A 1940

CLAUSS, Helen O.
23 Glenn Street
Chambersburg, Pa. A 1951

CLERK, Mrs. Gabrielle Brunet
249 Lockhart
Town of Mt. Royal
Quebec, Can. A 1949

COHEN, Mrs. Mathilde Weill
46 E. 91st Street
New York 28, N. Y. A 1942

•COHN, Frederick E.(M.D.)
77 E. Market Street
Rhinebeck, N. Y. A 1940

COHN, Mrs. Ruth C.
159 Liberty Road
Englewood, N. J. A 1946

COLE, Joseph Carl (Ph.D.)
Metropolitan State Hospital
Psychology Department
Norwalk, Calif. A 1949

COLM, Hanna(Ph.D.)
3 Overhill Road
Falls Church, Va. A 1944

COLVIN, Ralph (Ph.D.)
Astor Home for Children
Rhinebeck, N.Y. A 1956

CONVERS, Miss Josefina Vergard
Cerrera 9, #58-07
Bogota, Colombia St.Aff.1957

COOK, Philip H.(Ph.D.)
Department of Labour and
National Service
Swanston Street
Melbourne c.1 A 1941
Victoria, Australia F 1949

COPEL, Sidney L.
5606 Wyndale Avenue
Philadelphia 31, Pa. A 1956

COUGHLIN, Mrs. Anne Malone
Dept. of Psychiatry
Montreal General Hospital
Montreal, P. Q. St.Aff. 1954

•COWIN, Marion
433 West 21st Street
New York 11, N. Y. F 1940

COX, Grace B.
Psychological Services
Bureau of Mental Health
Harrisburg, Pa. A 1950

COX, Rachel Dunaway(Ph.D.)
503 Walnut Lane A 1950
Swarthmore, Pa. F 1952

CRAIN, William
1781 Westmont Drive
Anaheim, Calif. A 1955

CRASILNECK, Harold B.
University of Texas (Ph.D.)
Southwestern Medical
School
5323 Harry Hines Blvd.
Dallas, Texas A 1956

CRILE, Mrs. Mary
Big Sur, Calif. A 1945

CROVETTO, Lorraine
703 Carondelet Street
New Orleans 12, La. A 1953

CRUMPTON, Evelyn(Ph.D.)
1451½ Barry Avenue
Los Angeles 25, Calif. A 1955

CUMMINGS, C. Peter(Ph.D.)
555 Weadley Road
Strafford, Pa. A 1954

CUNNINGHAM, Mrs. Cornelia
100 Chesney Lane
Philadelphia 18, Pa. A 1950

DANA, Richard H. (Ph.D.)
Dept. of Psych. & Sociology
Univ. of Nevada
Reno, Nev. A 1956

D'ANGELO, Rita Y.
2604 University Avenue
Bronx 68, N. Y. A 1955

DAVENPORT, Beverly(Ph.D.)
2042 Oliver Avenue
San Diego 9, Calif. A 1949

DAVID, Henry P.(Ph.D.)
Dept. Institutions
and Agencies
State of New Jersey
135 W. Hanover Street
Trenton 25, N.J. A 1953

DAVIDSON, Alene(Ph.D.)
280 Melbourne Road
Great Neck, N. Y. A 1953

•DAVIDSON, Helen H.(Ph.D.)
90 La Salle St.
New York, N.Y. F 1940

DAVIS, John A.(Ph.D.)
2444 Archwood Drive
Dayton 6, Ohio A 1955

DAVISON, Arthur H.(Ph.D.)
Chief Psychologist
Sonoma State Hosp. A 1952
Eldridge, Calif. F 1953

DEAN, Sidney I.(Ph.D.)
4840 S. W. Tenth St.
Fort Lauderdale, Fla. A 1958

DE MARTINO, Hugo A.
Taconic Manor, RFD 2 A
Peekskill, N.Y. A 1958

DERI, Mrs. Susan K.
235 W. 76th Street
New York 23, N. Y. A 1948
F 1950

DERNER, Gordon F.(Ph.D.)
Department of Psychology
Adelphi College
Garden City, N. Y. A 1949
F 1951

DE VAULT, Mrs. Barbara Allen
c/o Emma Pendleton
Bradley Home,
Riverside 15, R.I. A 1953

DE VAULT, Helen C.
593 33rd Street
Manhattan Beach, Calif. A 1950

DE VILLIERS, David Z.
University College
Fort Hare
Union of South Africa A 1953

DE VOS, George (Ph.D.)
Lecturer in Social Welfare
Univ. of California
Berkeley 4, Calif. F 1957

DIAMOND, Mrs. Florence
135 Sierra View Road
Pasadena 2, Calif. A 1950

DIANA, Pearl Butler(Ph.D.)
4111 Hillcrest Rd. A 1949
Richmond, Va. F 1951

DICK, Miss Frances
284 Eastern Parkway
Brooklyn 25, N.Y. A 1958

DIEPPA, Jorge J.(Ph.D.)
Escuela de psicologia
Faculdad de Humanidades
y Educacion, Univ. Central
de Venezuela
Caracas, Venezuela A 1958

DINGMAN, Paul R.(Ph.D.)
Child Guidance Center
500 Garver Building
Des Moines, Iowa A 1950

DOMINGUEZ, Kathryn(Ph.D.)
126 Tyson Road
Newtown Square, Pa. A 1945

DORKEN, Herbert, jr.(Ph.D.)
Mental Health Division
Department National
Health & Welfare
602 Jackson Bldg. A 1949
Ottawa, Ont., Canada F 1951

DOUGHERTY, Mrs. Margaret R.
1804 Roselynn Avenue
Scranton 10, Pa. A 1944

DOWLEN, Mrs. Caroline
4501 Corey Place
Las Vegas, Nev. A 1956

DRYSELIUS, Harold
601 S. Gramercy Place
Los Angeles, Calif. A 1950

DUDEK, Mrs. Stephanie Z.
19 W. 106th St.
New York, N. Y. A 1949

DUE, Floyd O.(M.D.)
370 29th Street
Oakland 9, Calif. A 1945

DUFRESNE, Georges
49 Spring Grove Crescent
Outremont, near Montreal A 1954
Canada

DUNLAP, Dorothy
Agnews State Hospital A 1954
Agnew, Calif.

DUNN, Michael B.(Ph.D.)
Devereux Ranch A 1941
School F 1945
Santa Barbara, Calif.

•EARL, C. J. C.(F.R.C.P.I.)
2 Dale Drive
Stillorgan, County Dublin F 1940
Ireland

EGLASH, Mrs. Evelyn
Washington College
Chestertown, Maryland A 1955

EIDUSON, Dr. Bernice T.
941 Stonehill Lane (Ph.D.)
Los Angeles 49, Calif. A 1949

EISNER, Betty G. (Ph.D.) St. Aff.
530 Gretna Green Way 1955
Los Angeles 49, Calif.

ELDRED, Donald M.
Psychology Department
Vermont State Hospital A 1948
Waterbury, Vt.

ELIZUR, Abraham(Ph.D.)
6 Tel Hai Street A 1949
Tel Aviv, Israel

ELLIOTT, Merle H.(Ph.D.)
1025 Second Avenue A 1944
Oakland 6, Calif.

ELLIS, Albert(Ph.D.)
Parc Vendome
333 W. 56th Street A 1950
New York 19, N. Y.

ENOCHS, Neil
366 Marie Avenue St.Aff. 1954
Los Angeles 42, Calif.

EPHRON, Beulah K.(Ed.D.)
40 E. 10th Street
New York 3, N. Y. A 1949

EPSTEIN, Hans L.(Ph.D.)
722 W. 176th Street
New York 33, N. Y. A 1944

ERICSON, Mrs. Helen
11844 E. Deana Street
El Monte, Calif. Aff. 1954

ERON, Leonard D.(Ph.D.)
Rip Van Winkle Foundation
454 Warren Street
Hudson, N. Y. F 1955

ESTRADA, Mrs. Carol Griffin
Psychology Department
Colorado State Hospital
Pueblo, Colorado A 1951

EVANS, John T.(Ph.D.)
85 Otis Street A 1951
Newtonville 60, Mass. F 1957

EVANS, Ray B.
4155 Jackson Avenue
Culver City, Calif. A 1954

EVERETT, Evalyn G.(Ph.D.)
Box 51
Napa State Hospital
Imola, Calif. A 1953

EXNER, John E. Jr.
Bur. of Testing & Research
De Pauw University
Greencastle, Indiana A 1957

FARBEROW, Norman L.(Ph.D.)
4211 Holly Knoll Drive
Los Angeles 27, Calif. A 1949

FARLEY, Julie(M.D.)
418 Northway
Baltimore, Md. A 1949

FATERSON, Hanna F.(Ph.D.)
1 Sheridan Square A 1943
New York 14, N.Y. F 1946

FEHRENBACH, Dr. Alice
3232 S. Josephine St.
Denver, Colo. A 1951

FEIFEL, Herman(Ph.D.)
VA Mental Hygiene Clinic
1031 S. Broadway A 1943
Los Angeles 15, Calif. F 1956

FEINBERG, Henry
15886 La Salle
Detroit, Mich. A 1949

FELDBERG, Theodore M.(M.D.)
11 E. Chase Street
Baltimore 2, Md. A 1944

FELDMAN, Dorothy A.(Ph.D.)
5225 Ellsworth Avenue
Pittsburgh 32, Pa. A 1952

FELDMAN, Irving(Ph.D.)
80 Poplar Ave.
W. Long Branch, N.J. A 1953

FELZER, Stanton B., (Ph.D.)
2014 North John
Russell Circle
Elkins Park 17, Pa. A 1954

FERGUSON, Kingsley G. (Ph.D.)
Psychology Department
Westminster Hospital
London, Ontario, Can. A 1954

FERRACUTI, Franco(M.D.)
Via Ugo Balzani 57
Roma, Italy A 1954

FEUERBURGH, Joseph (Ph.D.)
15 Stuyvesant Oval
N.Y. 9, N.Y. A 1957

FICHMAN, Lionel L. (Ph.D.)
241 South Sepulveda Blvd.
St. Aff. 1954
Los Angeles 49, Calif. A 1957

FILMER-BENNETT, Gordon
Psychology Dept. (Ph.D.)
Univ. of Portland A 1954
Portland 3, Oregon F 1956

FINE, Harold J.(Ph.D.)
VA Mental Hygiene Clinic
355 Fairfield Avenue
Bridgeport, Conn. A 1955

FINE, Reuben(Ph.D.)
225 W. 86th Street
New York 24, N. Y. A 1949
F 1954

FINN, Michael H. P.(Ph.D.)
1302 Burleigh Road
Orchard Hills
Lutherville, Md. A 1954
F 1958

FISCHER, Liselotte K.(Ph.D.)
615 North Wolfe Street
Baltimore 12, Md. A 1949

FLEMMING, Edward L.(Ed.D.)
10585 Lakeview Road East
Jacksonville 11, Fla. A 1954

FONT, Marion McKenzie
627 S. Carrollton Ave. A 1942
New Orleans 13, La. F 1947

FORER, Bertram R.(Ph.D.)
2170 Live Oak Drive E. A 1949
Los Angeles 28, Calif. F 1951

FORER, Lucille K.(Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1953

FORREST, Dr. Carol W.
c/o Mead Carney
Wiednerhauptstr 52
Vienna IV, Austria A 1951

FORTIER, Robert H. (Ph.D.)
VA Hospital
Buffalo, N.Y. A 1956

•FOSBERG, Irving A.(Ph.D.)
7831 Plum St. A 1940
New Orleans 10, La. F 1949

FOSTER, Austin(Ph.D.)
The Psychopathic Hospital
University of Texas
Medical Branch A 1950
Galveston, Texas F 1955

FRAMO, James L., Jr.(Ph.D.)
Eastern Penna. Psych. Inst.
Henry Ave. &
Abbottsford Rd. A 1955
Philadelphia 29, Pa. F 1957

FRANCOEUR, Thomas A.
1070 Crevier Avenue (Ph.D.)
Ville St. Laurent
Prov. Que., Canada Aff. 1954

FRANK, Lawrence K.
25 Clark Street
Belmont, Mass. H.M. 1954

FRANKEL, Esther B.(Ph.D.)
Child Guidance Clinic
Children's Hospital
420-22 Cherry Street
San Francisco 18, Cal. A 1953

•FRANZETTI, Mrs. Rosa
Padlina de
"El Silencio" Bloque 6-C-4
Caracas, Venezuela A 1940

FREAR, Edgar
Montrose, Pa. A 1950

FREY, Mrs. Harriet K.
59 Francisco Avenue
West Caldwell, N. J. A 1953

FRIEDMAN, Mrs. Gladys Miller
29575 So. Woodland Blvd.
Pepper Pike 24, Ohio A 1949

FRIEDMAN, Howard(Ph.D.)
316 Southfield Drive
Fayetteville, N. Y. A 1951

FRIEDMAN, Ira(Ph.D.)
29575 So. Woodland Blvd.
A 1954
Pepper Pike 24, Ohio F 1958

FRIEND, Mrs. Jeannette G.
16 Greenough Circle
Brookline 46, Mass. A 1949

FRISCH, Paul Z. (Ph.D.)
Psychology Department
Adelphi College
Garden City, N.Y. F 1956

•FROMM, Erika O.(Ph.D.)
5717 S. Kenwood
Chicago 37, Ill. A 1940

FROSTIG, Marianne (Ph.D.)
7257 Melrose Ave.
Los Angeles 46, Calif. A 1956

FRY, Franklyn D.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952

FRY, Mrs. Martha O.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952

FUCHSMAN, Seymour H.
288 Lexington Avenue
New York 16, N.Y. A 1944

GALLICO, Mrs. Margaret Wilson
Univ. of Dayton
Dayton 9, Ohio A 1957

GARDNER, Mrs. Ann K.
2569 Berkshire Road
Cleveland 6, Ohio A 1942

GASOREK, Kathryn
30 E. Elm Street
Linden, N. J. A 1949

GASTON, Charles O.
University of Texas
Medical Branch St. Aff. 1955
Galveston, Texas A 1957

•GAUDET, E. Louise(Ph.D.)
210 W. 70th Street
New York 23, N. Y. F 1940

GAUDET, Frederick J.(Ph.D.)
210 W. 70th Street A 1949
New York 23, N.Y. F 1958

GAVIRIA, Alvaro Villar, M.D.
Cra. 12 No. 20-69
Bogota, Colombia A 1957

GEIL, George A.
915 Kings Avenue
Springfield, Mo. A 1943

•GERING, Mrs. Evelyn E.
18100 Karen Drive
Tarzana, Calif . A 1940

GERSTEN, Charles(Ph.D.)
1821 Grandin Street S.W.
Roanoke, Va. A 1949

GETOFF, Louis
251 West 89th Street
New York 24, N.Y. A 1956

GIBBY, Robert G.(Ph.D.)
1220 Jeffras Avenue A 1954
Marion, Ind. F 1955

GILBERT, Raymond R.
32 Halifax Street
Boston 30, Mass. A 1951

GILLMAN, Mrs. Etta C.
16 Stevenson Avenue
Hartsdale, N. Y. A 1944

GINANDES, Mrs. Janet
1150 Fifth Ave.
New York. N.Y. A 1957

GLADFELTER, John(Ph. D.)
Dept. of Psychiatry
Southwestern Medical School
Dallas, Texas A 1958

GLASS, Blanche (Ph.D.)
35 E. 85th St.
New York 28, N.Y. A 1955

GOLDBERGER, Leo
Research Center for
Mental Health
New York University
21 Washington Place
New York 3, N.Y. A 1956

GOLDBLOOM, Betty M.(Ph.D.)
5415 Fifth Ave.
Pittsburgh 32, Pa. A 1952

GOLDFARB, William(M.D.)
530 West End Avenue A 1941
New York 31, N. Y. F 1944

GOLDSTEIN, Dr. Fred J.
Los Angeles Psych. Services
8770 W. Whitworth Dr.
Los Angeles 35, Calif. A 1956

GOLICK, Mrs. Margaret
944 Dunlap Avenue A 1953
Outremont, Quebec, Canada

GONDOR, Mrs. Lily H.
320 East 57th Street A 1949
New York 22, N. Y. F 1952

GOODMAN, Mrs. Beverly
915 W. End Ave., Apt. 5 D
New York 25, N.Y. A 1956

GOODMAN, Harvey(Ph.D.)
890 Park Avenue
New York, N.Y. A 1954

GOODMAN, Morris(Ph.D.)
3 Wellington Road
Livingston, N. J. A 1953

GOODNICK, Benjamin (Ph.D.)
Administration Building
Parkway and 21st
Philadelphia 3, Pa. A 1956

GOOLISHIAN, Harold A.(Ph.D.)
1008 Camp Circle West A 1952
La Marque, Texas F 1957

GORDON, Dr. Edward M.
39-A E. 72nd Street
New York 21, N. Y. A 1955

GORDON, Thelma
307 W. 11th Street
New York 14, N. Y. A 1951

GOTTLIEB, Mrs. Sophie B.
225 W. 86th Street
New York 24, N. Y. A 1943

GRAHAM, Virginia T.(Ph.D.)
General Hospital, N-3
Cincinnati 29, Ohio A 1953

GRASSI, Joseph R.
Bowman-Gray School of Med.
Wake Forest College
Winston-Salem, N. C. A 1942

GRAVES, Winifred S.(Ph.D.)
4242 Cornelius Ave. A 1948
Indianapolis 8, Ind. F 1951

GRAVITZ, Melvin A. (Ph.D.)
908 Kenbrook Court
Silver Spring, Md. A 1956

GRAYSON, Harry M.
403 S. Bundy Dr.
Los Angeles, Calif. A 1951

GREENBERG, Nathan
5447 Jeanne Mance Street
Montreal, Quebec
Canada St. Aff. 1954

GREENBERG, Pearl(Ph.D.)
25 W. Henry Street
Linden, N. J. A 1951

GREENE, Janet S.(Ph.D.)
65 E. 76th Street
New York 21, N. Y. A 1953

GREENSTADT, William M.
35 E. 30th Street St. Aff. 1954
New York, N. Y. A 1955

GRIER, Mary E. (Ph.D.)
2243 Harcourt Drive
Cleveland 6, Ohio A 1956

GROFF, Marne L.(Ph.D.)
1003 Dreams Landing
Annapolis, Maryland A 1952

GROSSMAN, Mrs. Marc J.
16950 S. Woodland Road
Shaker Heights 20, O. A 1949

GROSSMAN, Searles A.(Ph.D.)
4004 Coleridge Road A 1951
Wilmington 2, Del. F 1954

GUERTIN, Wilson H.(Ph.D.)
VA Hospital A 1950
Knoxville, Iowa F 1953

GUINDON, Jeannine
39 Ouest Gouin Blvd.
Montreal, Que., Can. A 1951

GUIORA, A. Zeev (Ph.D.)
4 Pines Street
Rehovoth, Israel A 1957

GUNDLACH, Ralph(Ph.D.)
162 East 80th Street
New York 21, N. Y. A 1951

GUREVITZ, Saul(Ph.D.)
680 West End Avenue
New York 25, N. Y. A 1949

GURVICH, Mrs. Bernice M.
251 Willis Avenue
Hawthorne, N. Y. A 1950

GURVITZ, Milton S.(Ph.D.)
54 Gateway Dr. A 1948
Great Neck, N.Y. F 1951

GUY, William
Huron Valley Child Guidance
Clinic
310 S. Huron St.
Ypsilanti, Mich. A 1953

HABER, Wm. B.(Dr.)
275 Central Park West
New York 24, N. Y. A 1953

•HALLOW, William C.(Ph.D.)
422 Chestnut St.
Lebanon, Pa. A 1940

•HALLOWELL, A. Irving(Ph.D.)
Box 14, Bennett Hall
Univ. of Pennsylvania A 1940
Philadelphia 4, Pa. F 1944

HALLOWELL, Dorothy K.
3318 Midvale Avenue (Ph.D.)
Philadelphia 29, Pa. A 1947

HALPERIN, Sidney L.(Ph.D.)
1710 Makiki St.
Apt. 1001, Oahuan Tower
Honolulu, T.H. A 1949

HALPERN, Esther
189 A Bay State Rd.
Apt. 2A
Boston 15, Mass. St. Aff. 1954

HAMMER, Emanuel F.(Ph.D.)
685 West End Avenue A 1953
New York 25, N.Y. F 1959

HAMMOND, Mrs. Eleanor
R.D. 2
New Hope, Pa. A 1947

HAND, Dr. Mary Ella
432 Hamilton Place
Ann Arbor, Mich. A 1948

HANDEL, Gerald
Social Research, Inc.
145 East Ohio Street
Chicago 11, Ill. A 1954

HANFMANN, Eugenia(Ph.D.)
27 Franklin St. A 1948
Watertown 72, Mass. F 1950

HARLOW, Justin E. Jr.
308 Administration Bldg.
Univ. of Florida
Gainesville, Fla. F 1957

HARMES, John M.
RFD 3, Woodhill Road
Concord, N. H. A 1957

HARRIS, Albert J.(Ph.D.)
Educational Clinic
Queens College
Flushing, N. Y. A 1951

HARRIS, June (Ph.D.)
Bureau of Child Guidance
80 Lafayette St.
New York 13, N. Y. A 1941

HARRIS, Robert A.(Ph.D.)
Austen Riggs Center Inc.
Stockbridge, Mass. A 1954

HARRIS, Robert E.(Ph.D.)
The Langley Porter Clinic
University of California
Medical Center
San Francisco 22, Calif. A 1948

HARRIS, William W.
210 E. 181st Street
Bronx, N. Y. A 1949

•HARROWER, Molly R.(Ph.D.)
55 E. 86th Street
New York 28, N. Y. F 1940

HAWKINS, Mrs. Hermione
4604 Keswick Road
Baltimore 10, Md. A 1951

HAYS, Miss Berta
505 S. Harvard Blvd.
Los Angeles 5, Calif. A 1949

HEATH, Douglas (Ph.D.)
Psychology Dept.
Haverford College
Haverford, Pa. A 1956

HEBERT, Bernard
3827 Oxford (N.D.G.)
Montreal, Canada A 1955

HEISLER, Verda(Ph.D.)
2306 - 6th Avenue
San Diego, Calif. A 1951

HELLERSBERG, Elisabeth F.
641 Whitney Avenue (Ph.D.)
New Haven, Conn. A 1949

HEMMENDINGER, Larry
1026 Park Avenue (Ph.D.)
Bridgeport, Conn. A 1950

HENRY, William E.(Ph.D.)
5835 Kimbark Avenue A 1948
Chicago, Ill. F 1956

HERNESS, Mrs. Christina
Amherst H. Wilder Child
Guidance Clinic
670 Marshall Avenue
St. Paul 4, Minn. A 1952

•HERTZ, Marguerite R.(Ph.D.)
2835 Drummond Road
Shaker Heights, Ohio F 1940

•HERTZMAN, Max(Ph.D.) A 1940
253 West 101st St. F 1946
New York City

HIGGINSON, Gordon K. (Ph.D.)
6040 N. Montana
Portland, Ore. A 1954

•HILDEN, Arnold H.(Ph.D.) A 1940
628 Clark Avenue
Webster Groves 19, Mo. F 1943

HILKEVITCH, Rhea R.(Ph.D.)
1122 Colfax
Evanston, Ill. A 1954

HILLSON, Joseph (Ph.D.)
Norfolk State Hospital
Norfolk, Neb. A 1956

HILTMANN, Hildegard, Dr.
Professor of Psychology F 1957
Univ. of Freiburg
Bertoldstrasse 17, Germany

HIMELSTEIN, Philip, (Ph.D.)
Dept. of Psych.
Univ. of Arkansas A 1956
Fayettesville, Ark.

•HIRNING, L. C.(M.D.)
R.F.D. #1
Katonah, N.Y. F 1940

HIRSCH, Mrs. Janet F.
67-49-C 192nd Street
Fresh Meadows 65, N.Y. A 1948

HOCH, Erasmus L.(Ph.D.)
5932 Axiston Road
Bethesda 14, Md. A 1954

HOCKER, Mrs. Margaret W.
220 Reily Street
Harrisburg, Pa. A 1951

HOLANCHOCK, George
Box 138
Claymont, Dela. A 1957

HOLMES, Frances B.(Ph.D.)
Whetstone Rd., R.D. 2 A 1950
Harwinton, Conn.

HOLODNAK, Helen Barbara
31-38–36th Street
Astoria 3, L. I., N. Y. A 1949

HOLT, James M. (Ph.D.)
3816 Bledsoe
Los Angeles 66, Calif. A 1956

HOLZBERG, Jules D.(Ph.D.) A 1949
Box 351 F 1954
Middletown, Conn.

HOOKER, Mrs. Evelyn(Ph. D.)
400 S. Saltair Ave.
Los Angeles 49, Calif. F 1958

HORLICK, Reuben S.(Ph.D.)
3004 N. Stuart Street
Arlington 7, Va. A 1951

HOWARD, J. W.(Ph.D.)
Route 2
Rigaud, P.Q., Canada A 1954

HOWARD, Stephen J.
3601 Marcia Drive Aff. 1954
Los Angeles 26, Calif. A 1958

HOWLAND, Allan O.
Inst. for Direct Analysis
Temple Univ. Hospital
15th and Ontario
Philadelphia 40, Pa. A 1951

HUBER, Jack T.(Ph.D.)
310 East 55th St.
New York 22, N.Y. F 1958

HUGHES, Robert M.(Ph.D.)
Suite 101
849 Peachtree St., N.E. A 1944
Atlanta 8, Ga. F 1954

HUTT, Max L.(Ph.D.)
Department of Psychology
University of Michigan A 1947
Ann Arbor, Mich. F 1952

IMRE, Paul
Spring Grove State Hospital
Catonsville 28, Md. A 1954

INMAN, John M.
1310 La Loma Avenue
Berkeley 8, Calif. A 1945

IVERSON, Norman E. (Ph.D.)
Suite 213
2021 North Central Avenue
Phoenix, Arizona A 1956

IVES, Margaret(Ph.D.)
St. Elizabeths Hospital A 1953
Washington 20, D.C. F 1955

JACOBS, Martin E.(Ph.D.)
165 No. Village Ave.
Rockville Center, N.Y. A 1955

JAHODA, Hedwig(Ph.D.)
500 W. 235th Street
New York 63, N. Y. A 1952

JEFFREYS, Alvis W., Jr.(Ph.D.)
Western State Hospital
Staunton, Va.
A 1952

JEFFRIES, Mrs. Helen
14 East Sixth Street
Media, Pa.
A 1956

JENSEN, Arthur R. (Ph.D.)
4314 Udall St.
San Diego 6, Calif. A 1956

JOEL, Walther(Ph.D.)
9629 Brighton Way A 1946
Beverly Hills, Calif. F 1950

JOHNSON, Elizabeth Z.
VA Hospital
Lexington, Ky. (Ed.D.)
F 1956

JOHNSON, Richard B.
Bureau of Child Guidance
166th St. & 65th Ave.
Flushing 65, N.Y. A 1953

JOHNSON, Theresa
229 S. Maple Drive
Beverly Hills, Calif. A 1949

JOHNSON, Thomas F. (Dr.)
4412 Concord Dr.
Trevose, Pa.
A 1957

JOSEPH, Alice(M.D.)
114 E. 71st St.
New York 21, N.Y. A 1944

JOSEY, William E.
11905 Heritage Lane
Houston, Texas
A 1949

•JUNKEN, Elizabeth M.(Ph.D.)
468 Lydecker Street
Englewood, N. J.
A 1940

KADINSKY, D.
8 P. Smolenski Street
Tel Aviv, Israel A 1946

KADIS, Mrs. Asya L.
1060 Park Avenue
New York 28, N. Y. A 1944

KAHN, David F.(Ph.D.)
Lexington School for Deaf
904 Lexington Avenue
New York 21, N. Y. A 1953

KAHN, Marvin W. (Ph.D.)
University of Colorado
Medical School
4200 E. 9th Avenue
Denver, Colo. A 1956

KAHN, Maj. Theodore C.(Ph.D.)
Chief Psychologist
USAF Hospital
APO 633 c/o P.M. A 1953
New York, N.Y. F 1954

KALANT, Mrs. Lee
4941 Coronet Street
Montreal 26, Canada A 1954

KALINKOWITZ, Bernard N.
Graduate School of (Ph.D.)
Arts and Science
New York University
Washington Square
New York, N. Y. A 1954

KALIS, Betty Lee (Ph.D.)
98 Levant St.
San Francisco 14, Calif. A 1956

KAPIT, Milton E.
1 W. 85th Street
New York 21, N. Y. A 1950

KAPLIN, Bert(Ph. D.)
Dept. of Psychology
Univ. of Kansas
Lawrence, Kansas A 1958

KAPLAN, Henry K.
Mendota State Hospital
Madison, Wis. A 1956

KAPLAN,Herbert
Patricia Avenue
Fishkill, N. Y. A 1949

KAPLAN, Norman(Ph.D.)
302 W. 35th St.
Savannah, Ga. A 1949

KARSON, Samuel (Ph.D.)
Dade County Child Guidance
Clinic
1350 N.W. 14th St. F 1957
Miami, Florida

KASS, Walter(Ph.D.)
Department of Psychiatry
Albert Einstein College
of Medicine F 1955
New York 61, N.Y.

KATAGUCHI, Yasufumi
Natl. Inst. of Mental Health
Kohadai Ichikawa, A 1958
Chiba, Japan

KATES, Solis L.(Ph.D.)
University of Massachusetts
Amherst, Mass. A 1949

KATZ, Mrs. Florine
67 East 82nd Street A 1953
New York 28, N.Y.

KATZ, Mrs. Harriet
142 West Stella Lane A 1950
Phoenix, Arizona

KAUFMANN, Elizabeth M.
414 W. 121st Street A 1950
New York 27, N. Y.

KAVKEWITZ, Henry(Ph.D.)
1060 Union Street A 1955
Brooklyn 25, N. Y.

KELLMAN, Samuel
17606 Prairie A 1949
Detroit 21, Mich.

KELSEY, Howard Phelps
1252 Fourth Street A 1944
Sarasota, Fla.

•KEMPLE, Camilla
20 W. 86th Street A 1940
New York 24, N.Y. F 1946

KENDIG, Isabelle V.(Ph.D.)
Ashton, Md. A 1944 F 1946

KESSLER, Mabel G.(Ph.D.)
Montgomery County
Public Schools
Court House
Norristown, Pa. A 1952

KEW, Clifton E.
32 Gramercy Park So.
New York 3, N.Y. A 1949

KIDORF, Irwin W.(Ph.D.)
VA Hospital
Coatesville, Pa. St. Aff. 1955

KING, Francis W.(Ph.D.)
4 Kingsford Road
Hanover, N. Hampshire A 1952

KINGSLEY, Dr. Leonard
Officers Message Center
Box 189, Walter Reed
Army Hospital St. Aff. 1954
Wash. 12, D.C. A 1957

KIRK, Virginia(Ph.D.)
Vanderbilt University
School of Medicine
Nashville 5, Tenn. A 1944

KITAY, Philip M.(Ph.D.)
8707–35th Avenue A 1955
Jackson Heights 72, N. Y.

KLASS, Walter K.(Ph.D.)
North Central College
146 N. Sleight Street
Naperville, Ill. A 1946

KLATSKIN, Ethelyn H.(Ph.D.)
Dept. of Pediatrics
4084 LMP
333 Cedar St. A 1946
New Haven 11, Conn. F 1955

KLEIN, Abraham(Ph. D.)
433 W. 21st Street
New York 11, N. Y. A 1955

KLEIN, Mrs. Beatrice
Woodstock, N.Y. A 1946

•KLEIN, Eva L.(M.D.)
1148 Fifth Avenue
New York 28, N. Y. A 1940

KLEIN, George S. (Ph.D.)
Research Center for
Mental Health
21 Washington Place F 1956
New York 3, N.Y.

KLEINBERG, Mrs. Rosalyn K.
6606 N. 11th St. A 1950
Philadelphia 26, Pa.

•KLOPFER, Bruno(Ph.D.)
Box 2971 F 1940
Carmel, Calif.

KLOPFER, Walter G.(Ph.D.)
Dept. of Psychology
Univ. of Portland A 1946
Portland, Oregon F 1951

KNAPP, Pearl G. (Ph.D.)
Dept. of Psychiatry
Cedars of Lebanon Hosp.
4833 Fountain Avenue
Los Angeles 29, Calif. F 1956

KORDA, Mrs. Geraldine J.
1030 Prospect Blvd.
Pasadena, Calif. A 1949

KORNER, Anneliese F.(Ph.D.)
Mt. Zion Psychiatric Clinic
A 1950
San Francisco 15, Calif. F 1953

KORNREICH, Melvin(Ph.D.)
8 Kay Ave.
Jericho, L.I., N.Y. A 1951

KORNRICH, Milton
67-29B Springfield Blvd.
Bayside 64, N.Y. St. Aff. 1958

KOTKOV, Benjamin (Ph.D.)
8 Orchard Street
West Brattleboro, Vt. A 1949

KOVNAR, Murray (Ph. D.),
Director Psychology Dept.
State Hospital
Jamestown, N. Dakota

•KRAFFT, Mrs. Margaret R.
27 West 96th Street, Apt. 4C
New York 25, N.Y. A 1940

KRAL, V. Adalbert (M.D.)
4145 Blueridge Crescent
Montreal, Que., Can. A 1953

KRAMISH, Art A. (Dr.)
Chief, Psychology Service
V.A. Hospital
Knoxville, Iowa A 1957

KRASNER, Leonard (Ph.D.)
VA Hospital
Palo Alto, Calif. A 1952

KRECZKOWSKI, Joseph
729 Carson Street
Pittsburgh 3, Pa. A 1944

KROUT, Maurice H. (Ph.D.)
1938 Cleveland
Evanston, Ill. A 1950

KRUGMAN, Dorothy C. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1944

KRUGMAN, Herbert E. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1943

KRUGMAN, Judith I. (Ph.D.)
P.O. Box 43
Tomkins Cove, N.Y. A 1941

•KRUGMAN, Morris (Ph.D.)
P.O. Box 43
Tomkins Cove, N.Y. F 1940

KUSHNER, Malcolm (Ph.D.)
8460 S.W. 185th Terrace
Miami 37, Fla. A 1956

KUTASH, Samuel B. (Ph.D.)
3 Park Road A 1950
Maplewood, N. J. F 1951

LAKIN, Harriet A.
1959 S. Crescent Heights
Los Angeles 34, Calif. A 1950

LAMPL, Henry M.
266 Washington Ave.
Kingston, N.Y. A 1955

LANDISBERG, Selma
166 East 35th St.
New York 16, N.Y. A 1950

LASAGA, Jose I. (Dr.)
Calle 9, No. 407
Vedado, Habana, Cuba A 1957

LASKOWITZ, David
3856 Bronx Blvd.
Bronx 67, N.Y. A 1953

LAWRENCE, Ernest S. (Ph.D.)
240 S. La Cienega Blvd.
Beverly Hills, Calif. A 1955

LAWRENCE, James F. (Ph.D.)
Area Medical Office
V.A. 30 Cornhill A 1949
Boston, Mass. F 1954

LAWRENSON, Thomas J.
13-D Yale Street
Nutley, N. J. A 1955

LEBEAUX, Mrs. Thelma W.
106 Newton Avenue N.
Worcester 9, Mass. A 1944

LEBOWITZ, Mrs. Anne
13746 Magnolia Boulevard
Van Nuys, Calif. St. Aff. 1956

LEDER, Ruth
301 E. 21st Street
New York 10, N. Y. A 1950

LEDWITH, Nettie H. (Ph.D.)
Pittsburgh Child Guid. Center
201 DeSoto Street A 1948
Pittsburgh 13, Pa. F 1952

LEE, Dorothy B.
33-33 82nd Street A 1950
Jackson Heights 72, N. Y.

LEHMANN, Heinz E. (M.D.)
Verdun Protestant Hospital
Box 6034 A 1943
Montreal, Que., Can. F 1951

LEHRER, Ruth (Ph.D.)
Kansas Treatment Center
for Children
Third and Oakley Sts. A 1944
Topeka, Kans. F 1954

LEIDEN, Irving (Ph.D.)
750 Green Bay Rd.
Winnetka, Ill. A 1956

LEONARD, A. T.
1067 Pine St.
Muskegan, Mich. A 1954

LEOPOLD, Julius
104-29 117th St. St. Aff. 1953
Richmond Hill 19, N.Y.

LEPSON, Mr. David S.
1685 Parkline Drive
Pittsburgh 27, Pa. A 1958

LESSER, Erwin (Dr.)
University Guidance Center
University of Miami
Coral Gables 46, Fla. A 1958

LEVENSTEIN, Mrs. Phyllis
3268 Island Rd.
Wantagh, L. I., N. Y. A 1948

LEVEY, Archie
Ste. 33, Communits Apts.
Saskatoon,
Saskatchewan, Can. A 1956

LEVI, Joseph (Ph.D.)
50 W. 72nd Street A 1947
New York 23, N. Y. F 1954

LEVINE, Abraham (Ph.D.)
263-45 74th Ave.
Glen Oaks, N.Y. A 1952

LEVINE, Harold A. (Ph. D.)
42 Deepdale Parkway
Roslyn Heights, L.I., N.Y.
F 1959

LEVINGER, Leah
131 Jorelemon St.
Brooklyn 1, N. Y. A 1952

LEVINSON, Boris M. (Ph.D.)
39-25 47th Street A 1952
Sunnyside, L. I. C. 4,
N.Y. F 1956

LEVIT, Herbert I. (Ph.D.)
Dixmont State Hospital
Glenfield, Pa. A 1954

LEVY, Ruth Jacobs (Ph.D.)
14430 Union Avenue
Cambrian Park A 1948
San Jose, Calif. F 1951

LEVY, Sidney J. (Ph.D.)
7417 S. Oglesby Avenue
Chicago 49, Ill. A 1956

LEWINSOHN, Peter M. (Ph. D.)
705B No. 8th St.
Philadelphia 23, Pa. A 1958

LEWIS, Robert T. (Ph.D.)
2220 South Third Ave.
Arcadia, Calif. A 1953

LIBRESCO, Emile
R.D. 1, Box 14
Pound Ridge, N. Y. A 1952

LIEBEN, Mrs. Beatrice
285 Fountain Road
Englewood, N. J. A 1953

LIEBERMAN, Mrs. Janet Chase
1136 Fifth Ave.
N.Y. 28, N.Y. A 1956

LIT, Jack (Ph.D.)
1606 Nedro Avenue
Philadelphia 41, Pa. A 1956

LITTLE, Jack F. (Ph.D.)
8073 Earl Street
Oakland 5, Calif. A 1949

LOCKWOOD, Wallace V. (Ph.D.)
2552 Fifth Ave.
San Diego 3, Calif. A 1949

LOEHRKE, Leah M. (Ph.D.)
Veterans Administration
12227 Clifton Blvd.
Lakewood, Ohio A 1954

LOLIS, Kathleen
Bureau of Child Guidance
362 Schermerhorn St.
Brooklyn 17, N.Y. A 1949

LONGLEY, James L.
Industrial Psychology Division
The Detroit Edison Company
2000 Second Avenue
Detroit 26, Mich. A 1953

LONSTEIN, Murray (Ph.D.)
Chief Psychologist VA Hosp.
Leach Farm Road
Pittsburgh 6, Pa. A 1955

•LOPES, Jose Leme (M.D.)
Rua Martins Ferreira 75
Rio de Janeiro, Brazil F 1940

LOW, Howard (Ph. D.)
Dept. of Psychiatry
Div. of Psychology
State Univ. of Iowa
Iowa City, Iowa A 1954

LUCAS, Winafred B. (Ph.D.)
1019 Gayley Ave.
Los Angeles 24, Calif. A 1951

LUNDIN, William (Ph.D.)
60 E. Scott St.
Chicago 10, Ill. A 1954

LYONS, Joseph (Ph.D.)
Research Laboratory
V.A. Hospital F 1957
Lexington, Ky.

MacBRIDE, John L.
8234 Meyers Road
Detroit, Michigan A 1955

MacCASLAND, Mrs. Barbara W.
Marcy State Hospital A 1957
Marcy, N.Y.

MacDONALD, D. Stewart (Ph.D.)
Knox Reeves Advertising, Inc.
600 First National
Soo Line Bldg.
Minneapolis 2, Minn. A 1950

MacGREGOR, Dr. Robert
Univ. of Tex., Med. Branch A 1958
Galveston, Tex.

MACHOVER, Mrs. Karen A 1947
200 Fenimore Street F 1948
Brooklyn 25, N. Y.

MACHOVER, Solomon (Ph.D.) A 1947
200 Fenimore Street F 1948
Brooklyn 25, N. Y.

MAGNETTE, Jules (M.D.)
Nevada State Hospital A 1956
Reno, Nevada

MAHRER, Alvin R. (Ph.D.)
1315 S. Grape St. A 1955
Denver 22, Colo.

MAITI, Prof. Haripada P.
Director, B.M. Institute
of Psychology and Child
Development
Nr. Town-Hall, Ellis Bridge A 1952
Ahmedabad 6, India

MALLOY, Mrs. Helga
35 Church Hill
Montreal 6, Quebec A 1945
Canada

MALM, Mrs. Mildred
11423 E. Hallwood Drive A 1949
El Monte, Calif.

•MANN, Mrs. Edna B.
215 W. 98th Street F 1940
New York 25, N. Y.

MANSON, Morse P. (Ph.D.)
10655 Santa Monica Blvd. A 1950
Los Angeles 25, Calif.

MANUGE, Mrs. Elizabeth
4851 Cote St.
Luc Rd., Apt. 409
Montreal, Canada A 1956

MANUILOW, Tatiana
16, Cote Street
Catherine Road
Montreal, Que., Can. A 1954

MARGOLIS, Mrs. Muriel F.
390 Terrace Avenue A 1949
Garden City, L. I., N. Y.

MARIANI, Eugene L. (Dr.)
The Guidance Clinic
941 East Terrace
Chattanooga 3, Tenn. A 1958

MARIANI, Rose (Dr.)
The Guidance Clinic
941 East Terrace
Chattanooga 3, Tenn. A 1958

MARKER, Mrs. Beatrice W.
2131 Delancey Place
Philadelphia 3, Pa. A 1951

MARKHAM, Mrs. Sylvia
116 E. 68th Street
New York 21, N. Y. A 1954

MARSH, Donald, Ed. D.
595 E. Colorado Street
Pasadena, Calif. A 1956

MARSH, James T. (Ph.D.)
Department of Psychiatry
University of California
Medical School
Los Angeles 24, Calif. A 1955

MARTIN, Mr. Harry J., Jr.
254 Leggett Drive
Abilene, Tex. A 1957

MARX, Alfred
Children's Treatment Service
Central State Hospital
Norman, Okla. A 1956

MATHER, Elise D.
5260 W. Chicago
Detroit 4, Mich. A 1948

MATHEWS, W. Mason (Ph.D.)
Merrill-Palmer School
71 Ferry Avenue, E. A 1949
Detroit 2, Mich. F 1955

MATHIAS, Rudolf (Ph.D.)
5150 Juneau Road
Madison 5, Wisc. A 1950

MATLI, Elsie D.
2042 Hyde Street St. Aff. 1954
San Francisco, Calif.

MAYMAN, Martin (Ph.D.)
Menninger Foundation
Topeka, Kansas F 1956

MAZURKIEWICZ, Joseph F.
323 West Columbus
Street
Shenandoah, Pa. St. Aff. 1955

•McBRIDE, Katharine E. (Ph.D.)
Bryn Mawr College
Bryn Mawr, Pa. A 1940

McCARY, James Leslie (Ph.D.)
5101 Almeda at
Southmore
Houston, Texas A 1948
F 1956

McCLOSKEY, Mrs. E.
Pelham Park Apartments
229 W. Upsal St.
Philadelphia 19, Pa. A 1948

McCULLY, Robert
Payne Whitney Clinic
525 E. 68th St.
New York 21, N.Y. A 1959

McDONALD, Franklin R.
3700 Cherrywood Ave. (Ph.D.)
Los Angeles 18, Calif. A 1952

McFARLAND, Robert L. (Ph.D.)
VA Research Hospital
333 E. Huron Street
Chicago 11, Ill. F 1956

McGEE, Mrs. B. F.
Macada Road, Route 23
Bethlehem, Pa. A 1959

McNEILL, Harry V. (Ph.D.)
125 E. 26th Street A 1950
New York 10, N. Y. F 1951

McPHERSON, Marion W.
844 W. Lovell St. (Ph. D.)
Kalamazoo, Michigan A 1953

MEHR, Helen Margulies (Ph.D.)
498 McArthur Avenue A 1941
San Jose, Calif. F 1949

MENDENHALL, John H.
210-13 Nimitz Drive
West Lafayette, Indiana
A 1958

MERCER, Margaret (Ph.D.)
St. Elizabeths Hospital A 1946
Washington, D.C. F 1950

MEYER, George (Ph.D.)
2479 16th Avenue
San Francisco, Calif. A 1950

•MEYER, Mortimer M. (Ph.D.)
503 N. Bronson Avenue A 1940
Los Angeles 4, Calif. F 1949

•MIALE, Mrs. Florence
225 West 86th Street F 1940
New York, N. Y.

MICHAEL, Carmen Miller
6223 Lupton A 1951
Dallas 25, Texas F 1955

MICHAL-SMITH, Harold
1230 Park Avenue (Ph.D.)
New York 28, N. Y. F 1955

MILLER, Cecil R.
10857 Wellworth Ave.
Los Angeles St. Affi. 1953
California A 1955

MILLER, Christine (Ph.D.)
973 Keeler Avenue
Berkeley 8, Calif. A 1955

MILSTEIN, Dr. A. Freda
17558 Prest
Detroit 35, Mich. A 1946

MIMS, Mrs. Jean Giesey
1110 E. 32nd Street
Austin, Texas A 1943

MINDESS, Harvey (Ph.D.)
1473 Wooster St.
Los Angeles 35, Calif. A 1953

MINDLIN, Mrs. Dorothee F.
6408 Bannockburn Dr.
Bethesda 14, Md. A 1955

MOLISH, CDR Herman B.
MSC, USNR
Naval Medical Center Staff
Bethesda, Md. A 1950

MONTALTO, Fannie D. (Ph.D.)
2654 Fourth Avenue
San Diego 3, Calif. A 1952

MOORE, Mrs. Harriet Bruce
145 E. Ohio Street
Chicago 11, Ill. A 1953

MORELAND, Mrs. Margaret E.
Kirkwood Drive
Grand Island, N. Y. A 1950

MORF, Gustav (M.D.) (Ph.D.)
1410 Fayolle Avenue
Montreal 19, Quebec A 1954
Canada

MORGAN, Clellen L. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950

MORGAN, David W. (M.D.)
127 N. Madison Avenue
Pasadena 1, Calif. A 1943

MORGAN, Olive J. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950

MORIZE, Mrs. Andre
4, Rue Jean-du-Bellay
Paris 4°, France A 1945

MOROSON, Mrs. Gloria
110-21 73rd Road
Forest Hills, L.I., N.Y. A 1958

MORRIS, Charles M.
Dept. of Psychology
Lafayette College
Easton, Pa. A 1956

MORRISON, Alfonso
1412 Marshall
Houston 6, Texas St. Aff. 1956

MORROW, J. Lloyd (M.D.)
197 Passaic Avenue
Passaic, N. J. A 1943

MOTZ, Dr. Gerald
1604 Holbrook
Ponca City, Oklahoma A 1954

MUELLER, Adolph R. (M.D.)
1220 Washington Street
Leavenworth, Kans. A 1943

MUENCH, George (Ph.D.)
San Jose State College
San Jose, Calif. A 1946

MULLEN, Miss Esther
10 Downing Street
New York 14, N. Y. A 1950

•MUNROE, Ruth L. (Ph.D.)
239 Central Park West
New York 24, N. Y. F 1940

MUNZ, Adam
67-30 Clyde Street
Forest Hills, L. I., N. Y. A 1955

MURPHY, Rev. Kenneth
26 S. Center Street
Springfield, Ohio Aff. 1954

MURPHY, Lois Barclay (Ph.D.)
Menninger Foundation
Topeka, Kans. A 1941

MURRAY, David (Dr.)
489 N. East Avenue
Mississippi City, Miss. A 1958

MURRAY, Henry (M.D.)
7 Divinity Avenue A 1948
Cambridge 38, Mass. F 1950

MURSTEIN, Dr. Bernard I.
Dept. of Psychology
Univ. of Portland
Portland 3, Oregon A 1957

NAGELBERG, Leo (Ph.D.)
32 Hillcrest Rd.
Mt. Vernon, N. Y. A 1952

NAPOLI, Peter J. (Ed.D.)
West Shore Rd., RFD 2
Putman Valley, N.Y. A 1949

NEU, Mrs. Ruth A. Warburg
311 E. 72nd Street
New York 21, N. Y. A 1953

NEUMAN, Gerard G. (Ph.D.)
2925 Arrowood Trail
Deerfield, Illinois A 1955

NEWMAN, Joseph (Ph.D.)
University Drive
Pittsburgh 40, Pa. A 1950

NICHOLAS, Alma L.
200 Retreat Avenue
Hartford 2, Conn. A 1954

NIKEL, Frank
980 Cherry Street
Phoenixville, Pa. A 1948

NORTHCOTT, Hollie
1452 Willard St.
San Francisco 17, Calif. A 1954

NOSAL, Walter S. (Ed.D.)
John Carrol University
Cleveland 18, Ohio A 1954

NUNEZ, Rafael (Ph.D.)
Facultad de Filosofia
y letras, Univ. Nacional
Autonoma de Mexico
Ciudad Universitaria A 1954
Mexico 20, D.F., Mexico
F 1958

NUTT, Frances D.
Dept. of Psych.
Michigan State Univ.
East Lansing, Mich. A 1958

OCHROCH, Ruth (Dr.)
656 W. 162nd Street
New York 32, N. Y. A 1950

ODERBERG, Lt. Phillip
442 N. Croft Avenue
Los Angeles 48, Calif. A 1954

ODOM, Charles L. (Ph.D.)
404 Carondelet Bldg.
New Orleans 12, La. A 1949

OETTINGER, Mrs. Malcolm
3038 Cambridge Pl.
Washington N.W., D.C. A 1945

OLIN, Tom Davis
39 Jackson Road
Hartford 12, Conn. A 1956

OLINGER, Leonard Bennett
9952 Santa Monica Blvd. (Ph.D.)
Beverly Hills, Calif. A 1954

O'REILLY, P. Oliver,
(M.B., B.Ch.)
Saskatchewan Hospital
North Battleford
Saskatchewan, Can. A 1957

ORGEL, Sidney A. (Ph.D.)
425 W. Lafayette Ave.
Syracuse 5, N.Y. A 1952

ORR, David Hamilton (Ph.D.)
Psychological Services
Allentown State Hospital
Allentown, Pa. F 1956

OSSORIO, Abel Garcia (Ph.D.)
Department of Psychology
Washington University
St. Louis, Mo. A 1951

PALM, Rose (Ph.D.)
263 West End Avenue
New York 23, N. Y. F 1955

PAOLINO, Albert (Dr.)
12004 Paul Ave.
Cleveland 6, Ohio A 1958

PAPANIA, Ned
20161 McIntyre
Detroit 19, Mich. A 1954

PARKER, Rolland S. Mr.
Manhattan State Hospital
600 E. 125th St.
New York 35, N.Y. A 1957

PARNICKY, Dr. Joseph J.
Edw. R. Johnstone Training
and Research Center
Brodentown, N.J. A 1949

PARSONS, Rosa F.
2838 Eagle Street
San Diego 1, Calif. A 1947

PAUL, Waters C.
Psychology Dept. Boyce Hosp.
Station 3
Tuscaloosa, Ala. A 1956

•PAULSEN, Alma A. (Ph.D.)
433 W. 21st Street
New York 11, N. Y. F 1940

PAYNE, David H., M.A.D.O.
8345 Talbert Avenue A 1950
Huntington Beach, Calif.

PEAK, Horace M.
Fox 52
Patton, Calif. A 1949

PECK, Miss Rosalind
317 E. 24th St.
New York 10, N.Y. A 1958

PECKARSKY, Dr. Adeline K.
109 Weequahic Ave.
Newark 12, N.J. A 1958

PEIXOTTO, Helen E. (Ph.D.)
Child Center
Catholic University of America
Washington, D.C. F 1955

PEMBERTON, W. H. (Ed.D.)
481 Summit Avenue
Mill Valley, Calif. A 1941

PENA, Cesareo D. (Ph.D.)
Mental Health Institute
Box 111
Independence, Iowa A 1951

PENNINGROTH, Paul W.
1520 River Bluff Rd. (Ph.D.)
Jacksonville 11, Fla. A 1943

PESETSKY, Fred J.
Box 1131 Station B
Nashville 5, Tenn. St. Aff. 1957

PETERS, Marie Wilson
6144 Wayne Avenue A 1947
Philadelphia 44, Pa. F 1951

PEYMAN, Douglas A. R.
Psychology Department (Ph.D.)
Alabama State Hospital
Tuscaloosa, Ala. F 1956

PHILLIPS, Mrs. Allvertta B.
153 Fall Creek Parkway
Indianapolis 2, Ind. A 1950

PHILLIPS, Dr. John C.
4 Andrews Avenue
Malvern, Pa. A 1959

•PIOTROWSKI, Zygmunt A.
Jefferson Medical College
1025 Walnut St.
Philadelphia 7, Pa. F 1940

PLATT, Henry (Ph.D.)
5 Eisenhower Drive A 1950
Malvern, Willistown, Pa.

PLITTMAN, Jack C.
Psychology Department
Patton State Hospital
San Bernardino, Calif. A 1951

PLOTNICK, Mrs. Anna Rosen
1700 S. 60th St.
Philadelphia 42, Pa. A 1955

POPPLESTONE, John
Western Michigan Univ.
Box 243
Kalamazoo, Michigan A 1958

PORTER, Mrs. Lucille S.
250 First Avenue
New York 9, N. Y. St. Aff. 1953

POSER, Ernest George (Ph.D.)
Department of Psychology
McGill University
3600 McTavish Street A 1950
Montreal, P.Q., Canada F 1953

POTTHARST, Karl E. (Ph.D.)
4911 Van Nuys Blvd.
Suite 306
Sherman Oaks, Calif. F 1957

PRICE, Mrs. Marian Blewitt
854 S. Euclid
Pasadena 5, Calif. A 1953

PROCTOR, Paul W. (Ph.D.)
315 W. 106th Street
New York 25, N. Y. A 1951

PUZZO, Frank S.
130-52 232nd Street
Laurelton, N. Y. A 1949

RABIN, Albert I. (Ph.D.)
Department of Psychology
Michigan State University
East Lansing, Mich. F 1955

RABINOVITCH, M. Sam
Department of Psychology
Montreal Children's Hospital
Montreal 25, Canada A 1955

RADER, Dr. Gordon E.
Psychology Section
Department of Psychiatry
North Carolina
Memorial Hospital
Chapel Hill, N.C. A 1956

RADTKE, William L.
Route 4, Box 141
Ocala Road
Gainesville, Fla. A 1954

RAIFMAN, Dr. Irving
3102 Woodhollow Drive
Chevy Chase, Maryland

RAINWATER, Lee (Ph.D.)
145 East Ohio Street A 1956
Chicago 11, Ill.

•RAPAPORT, David (Ph.D.)
Austen Riggs Center F 1940
Stockbridge, Mass.

RAPKIN, Maurice (Ph.D.)
800 S. Robertson Blvd.
Los Angeles 35, Calif. A 1952

RAPPAPORT, Sheldon R.
(Ph.D.)
A 1951
290 Linden Lane F 1956
Merion, Pa.

RAPPAPORT, Sidney M. (Ph.D.)
A 1949
1423 Mellon Road F 1955
Wyncote, Pa.

RAUB, Edwin S. (Ed.D.)
213 Midland Avenue A 1952
Wayne, Pa.

RECORD, Father Maurice A.
Dept. of Psychology
Assumption College of
Windsor
Windsor, Ontario, Can. A 1954

REICHARD, Suzanne (Ph.D.)
1075 Cragmont Avenue A 1941
Berkeley, Calif.

REICHENBERG-HACKETT,
Wally (Ph.D.)
c/o Department of Psychology
College Station
Duke University A 1948
Durham, N. C.

REINTHAL, Mrs. Mary E.
3341 Medina Line Road A 1951
West Richfield, Ohio

REIS, Walter J. (Ph.D.) (M.D.)
Western Psychiatric
Institute
3811 O'Hara Street A 1943
Pittsburgh 13, Pa.

REISEL, Jerome
4937 Nagle Avenue
Sherman Oaks, Calif. A 1955

REISS, William J. (Ph.D.)
VA Center A 1955
Kecoughtan, Va.

REITZ, Mrs. Edna Maisner
5080 Fallbrook
Woodland Hills, Calif. A 1955

REITZELL, Mrs. Jeanne M.
500 S. Arroyo Boulevard A 1949
Pasadena 2, Calif.

RIBEIRO, Dr. Rene
Rua Henrique Dias 271
Recife A 1951
Pernambuco, Brazil

RICHARDS, T. W. (Ph.D.)
Dept. of Neuropsychiatry
Louisiana State University A 1942
School of Medicine F 1954
New Orleans 12, La.

•RICKERS-OVSIANKINA, M.
(Ph.D.)
Univ. of Connecticut F 1940
Storrs, Conn.

RIDGE, Lt. Bradley B.
U.S. Naval Hospital A 1958
Philadelphia, Pa.

RISCH, Frank (Ph.D.)
3097 Manning Avenue A 1949
Los Angeles 64, Calif.

•RITEY, Hector J. (M.D.)
815 Park Avenue A 1940
New York 21, N. Y.

•RIVERS, Mrs. Hubert M.
111 Mitchell Drive
Pittsburgh 28, Pa. A 1940

ROA-CHE, Miriam Haines
2329 Hudson Terrace (Ph. D.)
Coytesville, N.J. A 1951

ROBINOWITZ, Ralph (Ph.D.)
Clinical Psychologist
VA Hospital
Waco, Texas A 1957

ROBINSON, Elizabeth Foster
Child Psychiatry Division
University Hospitals
Madison, Wisc. A 1954

ROCKBERGER, Harry (Ph.D.)
299 So. Harrison St.
East Orange, N. J. A 1954

RODAN, Mrs. Henrietta Itta
510 E. 85th Street
New York 28, N.Y. St. Aff. 1954

RODRIQUEZ-VALDERRAMA, Dr. Jose
Calle 71-#10-53
Bogota, D.E., Colombia

ROGERS, Lawrence S. (Ph.D.)
1046 Madison Street A 1949
Denver 6, Colo. F 1954

ROOK, Leroy H.
State Hospital No. 1
Fulton, Mo. A 1957

RORSCHACH, Mme. Olga
Hirschgartenweg H. M. 1954
Zurich 57, Switzerland

ROSE, Margaret E.
34 St. Marks Place
New York 3, N.Y.

ROSE, Nicholas
921 Westwood Blvd.
Los Angeles, Calif. A 1956

ROSEN, Esther Katz (Ph.D.)
1810 Rittenhouse Sq. A 1945
Philadelphia 3, Pa. F 1951

ROSENBERG, Israel H.
89-38 Whitney Avenue A 1953
Elmhurst 73, L. I., N. Y.

ROSENTHAL, Robert (Ph.D.)
2223 First Avenue, North
St. Aff. 1955
Grand Forks, N.D. A 1957

ROSENTHAL, Vin (Ph.D.)
Dept. of Neurology
and Psychiatry
Northwestern University
Medical School
301 E. Chicago Avenue
Chicago 11, Ill. A 1956

ROSNER, Stanley (Ph.D.)
971 Fairfield Avenue
Bridgeport, Conn. A 1954

ROSS, Harvey (Ph.D.)
450 N. Bedford Drive
Beverly Hills, Calif. A 1956

ROSS, M. Eleanor (Ph.D.)
Tri-County Mental
Health Clinics
Norristown, Pa. A 1944
F 1949

•ROSS, W. Donald (M.D.)
Department of Psychiatry
Cincinnati General Hospital
Cincinnati 29, Ohio F 1940

ROTHENBERG, Mrs. Eleanor
77 West 85th St.
New York 24, N.Y. A 1958

ROTMAN, Saul R. (Ph.D.)
Veterans Adm. Hospital
Sunmount, N. Y. A 1947

RUHL, Mrs. R. Ernest
817 Chestnut Street
Mifflinburg, Pa. A 1947

RUJA, David H. (Ph.D.)
435 No. Roxbury Drive
Beverly Hills, Calif. A 1949

RUSSELL, Howard
3680 Fairway Blvd.
Los Angeles 43, Calif. A 1954

•RYMER, Charles A. (M.D.)
230 Majestic Bldg.
Denver 2, Colo. F 1940

ST. CLAIR, Walter F. (Ed.D.)
999 Mammoth Road
Manchester, N. H. A 1943

SALTZMAN, Marguerite R.
2037 Spruce Street
Philadelphia 3, Pa. A 1950

SALTZMAN, Sara
7012 Wilson Lane
Bethesda 14, Md. A 1950

SALZMAN, Mrs. Anne
12548 Everglade Street
Los Angeles 66, Calif. A 1953

SANDER, Emilie T.
657 W. 161st Street
New York, N. Y. A 1950

SANDERSON, Herbert (Ph.D.)
1823 34th Avenue
San Francisco 22, Calif. A 1952

SARASON, Mrs. Esther K.
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944

SARASON, Seymour B. (Ph.D.)
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944

SARGENT, Helen D. (Ph.D.)
2025 Westwood Drive A 1945
Topeka, Kans. F 1950

SCALES, Margaret B. (Ph.D.)
50 King St.
New York 14, N.Y. A 1955

SCHACHT, Mrs. Leatrice Styrt
5 Avis Drive
New Rochelle, N. Y. A 1950

SCHACHTEL, Ernest G.
299 Riverside Drive
New York 25, N. Y. F 1951

SCHACHTEL, Mrs. Zeborah
299 Riverside Drive
New York 25, N. Y. A 1953

SCHAFER, Roy (Ph.D.)
School of Medicine
Yale University A 1953
333 Cedar Street F 1955
New Haven, Conn.

SCHAFFER, Robert E. (Ph.D.)
Byron Harless and
Associates, Inc.
420 W. Lafayette Street A 1956
Tampa, Fla.

SCHANBERGER, William J.
305 Veri Avenue A 1954
Pittsburgh 20, Pa.

SCHATTMAN, Mrs. Esther
Preger
210 E. 68th Street A 1950
New York 21, N. Y.

SCHAW, Louis C.
Mass. Inst. of Technology
Center for Intl. Studies
50 Memorial Drive
Cambridge 39, Mass.
St. Aff. 1956

SCHER, Sam C. (Ph.D.)
1668 Portland Avenue A 1956
St. Paul 4, Minn.

SCHERER, I. W. (Ph.D.)
Veterans Administration A 1949
Northampton, Mass.

SCHILLINGER, Morton
441 West End Avenue A 1953
New York 24, N. Y.

•SCHLESINGER, Mrs. Alicia de
Solis 155, VIII/A A 1940
Buenos Aires, Argentina

SCHMALZRIED, Newell T.
(Ph.D.)
412 S. Boots St.
Marion, Ind. A 1956

SCHMIDL, Fritz (M.S., Dr. Jur.)
6036 Upland Terrace A 1942
Seattle 18, Wash. F 1945

SCHNEIDER, Stanley F. (Ph.D.)
Neuropsychiatric Institute
University Hospital
Ann Arbor, Mich. A 1954

SCHONBAR, Rosalea Ann
(Ph.D.)
30 W. 60th St., Apt. 10H
New York 23, N.Y. A 1943

SCHUBERT, Herman J. P.
(Ph.D.)
Route 2
500 Klein Road
Buffalo 21, N.Y. A 1950

SCHULMAN, Doris
10 Downing Street
New York 14, N. Y. A 1948

SCHULMAN, Irving (Ph.D.)
638 Harvard Road
Cynwyd, Pa. A 1952

SCHUMACHER, Audrey Sims
2257 Northwest 11th Ave.
Gainesville, Fla. F 1949

SCHUMACHER, Henry C.
(M.D.)
2257 Northwest 11th Ave.
Gainesville, Fla. A 1941

SCHWARTZ, Arthur A.
251 Central Park West
New York 24, N. Y. A 1951

SCHWARTZ, Emanuel K.
12 E. 87th St. (Ph.D., D.S. Sc.)
New York 28 A 1949
New York F 1952

SCHWERIN, Mrs. Erna
2000 Shawnee Boulevard
Lima, Ohio A 1950

SEIDENFELD, Morton A. (Ph.D.)
National Foundation for
Infantile Paralysis
301 East 42nd St. A 1944
N.Y. 17, N.Y. F 1954

SEILER, Mrs. Geraldine F. A 1946
327 Grandview St. F 1950
Mt. Dora, Fla.

SEITZMAN, Daniel
2387 Ocean Avenue
Brooklyn 29, N. Y. A 1949

SELIG, Kalman
188 Clinton Avenue
Newark 5, N. J. A 1950

SELZER, Samuel (Ph.D.)
Box 65
Sonyea, N.Y. A 1954

SELZER, Samuel (Ph.D.)
Minnesota Mental Health
Center
Albert Lea, Minn. A 1956

SHACKETTE, Mrs. Sarah Eyre
Box 166
Carmel Valley, Calif. A 1942

SHAH, Saleem A. (Ph. D.)
1030 Kent Avenue
Catonsville 28, Maryland
A 1958

SHAPERO, Mrs. Amy Miller
34 Hubbard Avenue
Stamford, Conn. A 1949

SHAPIRO, David (Ph.D.)
Austen Riggs Foundation
Stockbridge, Mass. A 1950

SHARPE, Susie McMillan (Ph.D.)
46 W. 4th Street
Mt. Vernon, N. Y. A 1948

SHATTER, Florence (Ph.D.)
103 Maple St.
Great Neck, N.Y. A 1957

SHEEHAN, Joseph (Ph.D.)
416 - 21 Place
Santa Monica, Calif. A 1952

SHEER, Dr. Daniel E.
Department of Psychology
University of Houston
Houston 4, Texas A 1956

SHERMAN, Murray H. (Ph.D.)
350 Central Park West
New York 25, N.Y. A 1956

SHIPMAN, William G. (Ph.D.)
3601 Fifth Avenue
Pittsburgh 13, Pa. A 1956

SHNEIDMAN, Edwin S. (Ph.D.)
11431 Kingsland Avenue
A 1949
Los Angeles 66, Calif. F 1951

SHOBEN, Edward J., Jr. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1952

SHOR, Joel (Ph.D.)
121 East 94th Street
New York 28, N. Y. A 1945

SHULMAN, Harold S. (Ph.D.)
Mental Health Clinic
501 E. Springfield Ave.
Champaign, Ill. A 1957

SIEGEL, Edward L. (Ph.D.)
368 Bruce St.
Syracuse 3, New York A 1950

SIEGEL, Joseph H. (Ph.D.)
3304 Newcastle Drive
Dallas 20, Texas A 1956

SIEGEL, Max (Ph.D.)
50 Kenilworth Place A 1949
Brooklyn 10, N.Y. F 1956

SIEGEL, Miriam G. (Ph.D.)
57 E. 90th Street A 1942
New York 28, N. Y. F 1949

SILVERSTEIN, Mrs. Sophie M.
2301 Kings Highway
Brooklyn 29, N.Y.
St. Aff. 1956

SIMKIN, James S. (Ph.D.)
1757 S. Hayworth Ave.
Los Angeles 35, Calif. A 1952

SIMKINS, Lawrence
Dept. of Psychology
Univ.of Texas
Medical Branch
Galveston, Texas St. Aff. 1958

SIMON, Maria D. (Ph. D.)
Hartaecherstrasse 44
Vienna 19, Austria A 1959

SINGER, Roland H.
5930 Walnut St., Apt. A-3
Pittsburgh 32, Pa. A 1953

SISSON, Boyd D. (Ph.D.)
2237 Darlington Dr.
Forest Acres,
Augusta, Ga. F 1957

SKEELS, Dell
Humanistic-Social Department
University of Washington
Seattle 15, Wash. Aff. 1954

SLESS, Bernard
225 Upland Road
Merion, Pa. A 1952

SMITH, Frances (Ph.D.)
7155 E. Wardlow Road
Long Beach 8, Calif. A 1955

SMITH, James Innes
"Craighead"
West Fenton, North Berwick
East Lothian, Scotland A 1959

SMITH, Mrs. Margaret J.
Wisconsin Diagnostic Center
1552 University Avenue
Madison, Wis. A 1950

SMOLINSKY, Harold J. (Ph.D.)
Wernersville State Hospital
Wernersville, Pa. A 1952

SNOWDEN, Robert F.
1380 Circle Drive
San Marino 9, Calif. A 1953

SOBOL, Albert L. (Ph.D.)
308 Betsy Brown Road A 1949
Port Chester, N.Y. F 1954

SOMERVILLE, Addison W.
922 Madison Street, N.W.
Washington 11, D.C. A 1956

SOMMERS, Vita Stein (Ph.D.)
931 So. Windsor Blvd.
Los Angeles 19, Calif. A 1946

SOSNOFF, Mrs. Miriam St. Aff.
1895 Grand Concourse 1953
New York 53, N. Y. A 1955

SPANEY, Emma (Ph.D.)
Queens College
Flushing 67, N. Y. A 1949

SPENCER, Mrs. Betty L.
1912 18th Street
Huntington, W. Va. A 1951

SPIEGELMAN, Marvin (Ph.D.)
c/o C. G. Jung Inst.
Gemeindestrasse 27
Zurich 32, Switzerland A 1953

SPIN, Mrs. Lillian
500 E. 56th Street
Brooklyn 3, N. Y. A 1950

SPINDLER, Mrs. Joan Elizabeth
201 Kindersley Avenue
Mount Royal, Quebec, Can.
A 1948

SPIRER, Dr. Jess
Box 8186, Univ. Guidance
Center
Univ. of Miami
Coral Gables, Fla. F 1958

SPIRES, Alan M.
67-43 Cloverdale Blvd.
Bayside 64, N.Y. A 1954

SPITZER, Paul S.
Nelles School for Boys
Whittier, Calif. A 1951

SPRINGER, Florence E.
370 W. 255th Street
Box 71
Bronx, N.Y.

STANEK, Richard J. (Dr.)
Univ. of Santa Clara
Santa Clara, Calif. A 1957

STANFORD, Dr. Margaret J.
Sonoma State Hospital
Eldridge, Calif. A 1950

STANTON, Mrs. Harriet
15 Livermore Road A 1942
Wellesley Hills 82, Mass.

STAVRIANOS, Mrs. Bertha
823 Ingleside Place
Evanston, Ill. A 1943

STEEN, Thomas W. (Ph.D.)
1545 E. Kingsley Avenue
Pomona, Calif. A 1954

STEINER, Matilda E.
220 Brookdale Avenue A 1943
Newark 6, N. J. F 1946

STEINER, Meta (Ph.D.)
40-70 Hampton Street A 1948
Elmhurst 73, N. Y. F 1950

STEINZOR, Bernard (Ph.D.)
49 W. 96th Street
New York 25, N. Y. A 1943

STEISEL, Ira M. (Ph.D.)
The Childrens Unit
Eastern Pa. Psychiatric Instit.
Henry Ave. & Abbottsford
Rd., Phila. 29, Pa. A 1951

STENDEL, Mrs. Kathleen
Glendon-Westwood Med. Bldg.
1250 Glendon Avenue
Los Angeles 24, Calif. A 1950

STEPHENS, Gordon M. (M.D.)
189 Kingsway Ave.
Winnipeg, Man., Can. A 1941

STERN, Mrs. Kathryn Werner
348 East 18th St.
New York 3, N.Y. A 1952

STERN, Mrs. Phyllis Glaser
109 North Avenue A 1952
Fanwood, N. J.

STERNBERG, David
3130 Brighton 7th Street
Brooklyn 35, N. Y. St. Aff. 1955

STERNE, Spencer B.
Department of Psychology
Wayne County General Hosp.
A 1953
Eloise, Mich.

STEWART, Barbara M. (Ph.D.)
267 S. New Hampshire A 1949
Los Angeles 4, Calif.

STONE, Harold (Ph.D.)
531 La Cienega Blvd., Rm. 208
Los Angeles 48, Calif. A 1956

STONE, Irving R.
State Mental Hygiene Clinic
3525 Fourth Avenue A 1951
San Diego 3, Calif.

•STONE, L. Joseph (Ph.D.) A 1940
Vassar College F 1951
Poughkeepsie, N. Y.

STONESIFER, Fred A. (Ph.D.)
State Board of Health A 1951
Dover, Dela.

STOOPS, Mrs. Wanda Rah
3258 N. New Jersey Street A 1949
Indianapolis 5, Ind.

STOTZ, Marion
340 W. Enid Drive
Key Biscayna A 1953
Miami 49, Fla.

STRAIT, Bennett
509 Scott Street A 1950
Stroudsburg, Pa.

STRAUSS, Mrs. Elsa L.
3819 Dakota Street A 1951
Cincinnati, Ohio

STRUTHERS, Alice Ball (Ph.D.)
2501 Palos Verdes Drive, N.
Palos Verdes Estates A 1949
California

SULZER, Edward S.
309 Stonecrest Drive St. Aff. 1954
A 1958
De Witt 14, N.Y.

SWIFT, Joan Woodcock (Ph.D.)
5628 S. Blackstone Avenue A 1945
Chicago 37, Ill.

SYMONDS, Percival M. (Ph.D.)
Teachers College A 1950
Columbia University F 1951
New York 27, N. Y.

TABIN, Johanna Krout (Ph.D.)
162 Park Avenue A 1952
Glencoe, Ill.

TALLENT, Norman (Ph.D.)
47 Mohawk Road A 1953
Hampton, Va.

TAULBEE, Earl S. (Ph.D.)
Chief Psychologist A 1953
Norfolk State Hospital F 1955
Norfolk, Neb.

•TEICH, Mrs. Marianne
2040 McGraw Avenue A 1940
Bronx 62, N. Y.

TEICHER, Arthur. Dr.
215 West 88th St.
New York 24, N.Y.

TEMERLIN, Maurice K. (Ph.D.)
Guidance Service
University of Oklahoma A 1956
Norman, Okla.

TENNEY, Edward V. (Ph.D.)
735 Holland Avenue
Fresno, Calif. A 1948

THETFORD, William N.
9 E. 78th St. (Ph.D.)
New York 21, N.Y. F 1957

TOLMACH, Mrs. Regina E.
16 W. 77th Street
New York 24, N. Y. A 1949

TOMBLEN, Donald
V.A. Hospital
East Orange, N.J. A 1956

TOPPING, Marion Powers
(Mrs. Robert C.)
122 East 22nd Street
New York 10, N.Y. A 1948

TOWNSEND, Mrs. Marjorie M.
Plainfield, Vt. A 1949

TRACHTMAN, Gilbert M.
2941 Carlyle Road
Wantagh, L.I., N.Y. A 1954

TREAT, Wolcott C.
5027 Campanile Drive
San Diego 15, Calif. A 1953

TRIPP, Clarence A. (Dr.)
The Handwriting Inst.
18 E. 48th St.
N. Y. 17, N.Y. A 1956

TROUP, Evelyn (Ph.D.)
12890 Sunset Blvd. A 1948
Los Angeles 49, Calif. F 1949

•TUFT, Carlyn M. (Ph.D.)
4613 Larchwood Avenue
Philadelphia, Pa. A 1940

ULLMANN, Dr. Leonard P.
VA Hospital
Palo Alto, Calif. A 1958

UMPIERRE, Francisco Jose, Dr.
Department of Health
Stop 51, Roosevelt St. Aff.
Hato Rey, P.R. 1956

VACCARO, J. John (Ph.D.)
105-34 63rd Avenue A 1951
Forest Hills 75, N. Y. F 1955

VAN ALSTYNE, Dorothy
Manatee-Sarasota (Ph.D.)
Guidance Center,
Bradenton-Sarasota
Airport, Sarasota, Fla. A 1949

VANDENBERG, Steven G.
(Ph. D.)
Ypsilanti State Hospital
Joint Research Project
Box A
Ypsilanti, Michigan A 1951

VAN WEST, Mrs. Joan
193-22 109th Avenue
Hollis, N. Y. St. Aff. 1954

VAYHINGER, Dr. John M.
Dept. of Pastoral Psych.
and Counseling
Garrett Biblical Inst.
Northwestern Univ. Campus
Evanston, Illinois A 1952

VINSON, David (Ph.D.)
1210 Medical Towers
Houston 25, Texas A 1949

VOGEL, Horst (Dr.)
Psychosomatische Klinik
Univ. of Heidelberg
Vobstrasse 2, Germany A 1957

VORHAUS, David
27 W. 86th Street
New York 24, N. Y. H. M. 1954

VORHAUS, Pauline G. (Ed.D.)
27 W. 86th Street
New York 24, N. Y. A 1941
F 1944

WAGNER, Mazie Earle (Ph.D.)
Route 2
500 Klein Road
Buffalo 21, N.Y.
A 1950

WALTON, Mrs. Norma R.
930 Dart Road, Rt. 3
Mason, Michigan A 1949

WARNER, Samuel J. (Ph.D.)
200 East 16th Street
New York 3, N.Y. A 1953

WARREN, Lurene Z.
Mt. Pleasant State Home &
Training School
Mt. Pleasant, Mich. A 1949

WARSHAWSKY, Mrs. Florence
2889 Torrington Road A 1949
Shaker Heights 22, Ohio

WATERS, Thomas J.
839 Huntington Pike St. Aff.
Southampton (Bucks), Pa. 1955

WATKINS, Roberta Frank
533 San Marino
San Marino, Calif. St. Aff. 1955

WEINREBE, Mrs. Claire
236 W. 70th Street
New York, N.Y. St. Aff. 1953

WEINSTEIN, Dr. Marvin S.
1837 E. Medlock Drive
Phoenix, Arizona A 1958

WEIR, John R. (Ph.D.)
2841 Highview Avenue
Altadena, Calif. A 1954

WEISS, Bertram A.
4322 Alconbury Lane
Houston, Texas A 1956

WEISS, Emalyn R.
733 N. 3rd Street
Reading, Pa. A 1950

WEISS, Herman R. (Ph.D.)
1277 E. 48th Street
Brooklyn 34, N. Y. A 1953

WEISS, Sheldon W. (Ph.D.)
Chief Psychologist
Mental Hygiene Clinic
Delaware State Hospital
Farmhurst, Dela. A 1951

WEISSKOPF-JOELSON, Edith
Dept. of Psychology (Ph.D.)
Purdue University A 1943
Lafayette, Ind. F 1951

WEISSMANN, Serena
80 Winthrop Station
Brooklyn 25, N.Y. A 1950

WELLS, Frederick Lyman (Ph.D.)
87 School Street H.M. 1950
Belmont 78, Mass.

WENGATE, Pauline (Ph.D.)
2321 Crescent Avenue
Charlotte 7, N.C. A 1950

WENTLING, Verda M.
15 Elk Street A 1950
Hempstead, L. I., N. Y.

WENTWORTH-ROHR, Ivan
(Ph.D.)
Penthouse B
51 Fifth Avenue
New York 3, N.Y. A 1950

WERNER, Mr. Henry Clay
204 Eighth Ave.
New York 11, N.Y. A 1958

WERTHEIMER, Rita (Ph.D.)
33 Van Wart Avenue
White Plains, N.Y. A 1955

WEXLER, Rochelle M.
Apt. 6 D
130 Pelham Road
New Rochelle, N.Y. A 1949

WHITE, Mrs. Helen Cecelia
1025 Worsham Drive A 1950
Whittier, Calif.

WHITMAN, Mrs. Dorothy
7516 Eastlake Terrace
Chicago 26, Ill. St. Aff. 1956

WHITMAN, Roy M. (M.D.)
3905 Winding Way
Cincinnati 29, Ohio A 1954

WHITSELL, Leon J. (M.D.)
52 Shore View Avenue A 1942
San Francisco 21, Calif.

WICKERSHAM, Francis Myron
U.S.P.H.S.H. (Ph.D.)
Fort Worth, Texas A 1952

WIGDOR, Blossom T. (Ph.D.)
4552 Lacombe Avenue
Montreal 26, Quebec, A 1949
Canada F 1956

WILCOTT, Johanna Becker
Nebraska Psychiatric Inst.
6025 44th St.
Omaha 5, Nebraska

WILDE, Dr. Guido
Apartado Aereo 6651
Bogota, Colombia, S.A. A 1955

WILKINS, Mrs. Verna M.
Mother Goose Nursery School
9500 Warren Street
Silver Springs, Md. A 1950

WILLIAMS, Gertha (Ph.D.)
17211 Buckingham Dr. A 1944
Birmingham, Mich. F 1949

WILLIAMS, Helen E. (Ed.D.)
210 W. 70th Street
New York 23, N. Y. A 1950

WILLIAMS, Mrs. Jessie M.
Griffins
Abinger Hammer
Nr. Dorking, England A 1950

WILLIAMSON, Margaret O.
4 Bayview Place
Staten Island 4, N. Y. A 1945

WILSON, Helen Elizabeth
State Mental Hygiene Clinic
1500 North 30S S.A. 1958
Billings, Mont.

WILSON, Mary T.
R.D. 1
South Salem, N.Y. A 1944

WINER, Harold R. (Ph.D.)
8215 Westchester Drive
Dallas 25, Texas A 1956

WITZEMAN, S. Evangeline
5021 Hawkins Road (Ph.D.)
West Richfield, Ohio A 1952

WOLF, Klara C. (Ph.D.)
Inhurst House
Baughhurst, Nr. Basingstoke
Hants, England A 1951

WOLF, S. Jean (Ph.D.)
220 Fifth Avenue
New York 1, N. Y. A 1944

•WOLFSON, Mrs. Ruth
124 W. 79th Street
New York 24, N. Y. F 1940

WOLPE, Zelda S. (Ph.D.)
435 North Bedford Drive
Beverly Hills, Calif. A 1950

WOLTMANN, Adolf G.
1364 Lexington Ave.
New York 28, N. Y. A 1949

WOOD, Austin B. (Ph.D.)
810 E. 19th Street
Brooklyn 30, N. Y. A 1943

WOOLF, Henrietta K.
3345 Dent Place, N.W.
Washington 7, D.C. A 1950

WRIGHT, M. Erik (M.D.)
Department of Psychology
University of Kansas
Lawrence, Kans. A 1943

WRIGHT, Morgan
Medical Arts Clinic A 1955
Regina, Saskatchewan, Can.

WYATT, Frederick (Ph.D.)
1027 E. Huron Street A 1948
Ann Arbor, Mich. F 1949

WYLIE, Alexander
Box 902
Norfolk State Hosp. St. Aff. 1956
Norfolk, Neb. A 1957

YADOFF, Bernard
5651 Munhall Road
Pittsburgh 17, Pa. A 1958

YANG, Andrew T. (Ph.D.,
2417 James K. Blvd.
Pontiac, Mich. A 1957

ZACHMANN, Mrs. Esther
Apartado Aereo 40-84 St. Aff.
Bogota, Colombia, S.A. 1956

ZADEK, Mildred A.
131 Lincoln Road
Brooklyn 25, N. Y. A 1949

ZAVINSKY, Mrs. Almena Parker
20970 Pawnee Trail
Chemakator Park
Las Satos, Calif. A 1951

ZEEV, Bracha
562 West End Ave.
New York 24, N.Y. A 1957

ZEICHNER, Abraham M.(Ph.D.)
57 Northside Road
North Haven, Conn. F 1955

ZIERER, Ernest(Ph.D.)
42-05 Layton Street
Elmhurst, L. I., N. Y. A 1952

ZIMET, Carl N.(Ph.D.)
333 Cedar Street
New Haven, Conn A 1959

ZIMMERMAN, Irla Lee(Ph.D.)
8536 Saturn Street
Los Angeles 35, Calif. A 1949

ZUCKER, Luise J. (Ph.D.) A 1945
276 Riverside Drive F 1950
New York 25, N. Y.

GEOGRAPHICAL DIRECTORY OF MEMBERSHIP OF THE SOCIETY FOR PROJECTIVE TECHNIQUES

UNITED STATES AND TERRITORIES

ALABAMA

Tuscaloosa

Paul, Waters C.
Peyman, Douglas A. R.

ARIZONA

Cassel, Russell

Phoenix

Canter, Aaron H.
Iverson, Norman
Katz, Harriet
Weinstein, Marvin

ARKANSAS

Himelstein, Philip

CALIFORNIA

Bergstrom-Borland, Ingrid
Bowdlear, Charles
Bradway, Katherine
Campion, John
Cole, Joseph
Crain, William
Crile, Mary
Davison, Arthur H.
De Vault, Helen C.
Dunlap, Dorothy
Evans, Ray B.
Everett, Evalyn G.
Gering, Evelyn
Klopfer, Bruno
Lebowitz, Anne
Lewis, Robert T.
Payne, David H.
Peak, Horace M.
Pemberton, W. H.
Plittman, Jack C.
Shackette, Sarah
Smith, Frances
Stanek, Richard
Stanford, Margaret
Steen, Thomas
Struthers, Alice Ball
Tenney, Edward V.
Zavinsky, Almena

Altadena

Brozovich, Stanley M.
Weir, John R.

Berkeley

Bell, John E.
DeVos, George
Inman, John M.
Miller, Christine
Reichard, Suzanne

Beverly Hills

Anderson, Dorothy V.
Brandt, Rudolph J.
Joel, Walther
Johnson, Theresa
Lawrence, Ernest
Olinger, Leonard
Ross, Harvey
Ruja, David H.
Wolpe, Zelda S.

El Monte

Ericson, Helen
Malm, Mildred

Los Angeles

Armon, Mary Virginia
Beale, Elizabeth
Bolgar, Hedda
Buhler, Charlotte
Centers, Louise
Crumpton, Evelyn
Dryselius, Harold
Eiduson, Bernice T.
Eisner, Betty G.
Enochs, Neil
Farberow, Norman L.
Feifel, Herman
Fichman, Lionel
Forer, Bertram R.
Forer, Lucille K.
Frostig, Marianne
Goldstein, Fred
Grayson, Harry
Hays, Berta
Holt, James
Hooker, Evelyn
Howard, Stephen J.
Knapp, Pearl G.
Lakin, Harriet A.
Lucas, Winafred
Manson, Morse P.
Marsh, James
McDonald, Franklin R.
Meyer, Mortimer M.
Miller, Cecil R.
Mindess, Harvey
Oderberg, Philip
Rapkin, Maurice
Risch, Frank
Rose, Nicholas
Russell, Howard
Salzman, Anne
Shneidman, Edwin S.
Simkin, James S.
Sommers, Vita Stein
Stendel, Kathleen
Stewart, Barbara M.
Stone, Harold
Troup, Evelyn
Zimmerman, Irla Lee

Oakland

Due, Floyd O.
Elliott, Merle H.
Little, Jack F.

Palo Alto

Krasner, Leonard
Ullmann, Leonard

Pasadena

Diamond, Florence
Korda, Geraldine J.
Marsh, Donald
Morgan, David W.
Price, Marian
Reitzell, Jeanne M.

San Diego

Davenport, Beverly
Heisler, Verda
Jensen, Arthur R.
Lockwood, Wallace V.
Montalto, Fannie D.
Parsons, Rosa F.
Stone, Irving R.
Treat, Wolcott C.

San Francisco

Frankel, Esther
Harris, Robert E.
Kalis, Betty Lee
Korner, Anneliese F.
Matli, Elsie
Meyer, George
Northcott, Hollie
Sanderson, Herbert
Whitsell, Leon

San Jose

Burton, Arthur
Levy, Ruth J.
Mehr, Helen Margulies
Muench, George

San Marino

Snowden, Robert F.
Watkins, Roberta F.

Santa Barbara

Clapp, Hazel S.
Dunn, Michael B.

Santa Monica

Baker, Gertrude
Sheehan, Joseph

Sherman Oaks

Pottharst, Karl
Reisel, Jerome

Whittier

Spitzer, Paul
White, Helen Cecelia

Woodland Hills

Cartwright, Robert W.
Reitz, Edna M.

COLORADO

Estrada, Carol G.

Denver

Billings, Edward G.
Fehrenbach, Alice R.
Kahn, Marvin
Mahrer, Alvin
Rogers, Lawrence S.
Rymer, Charles A.

CONNECTICUT

Barbara, Peter Paul
Holmes, Frances B.
Holzberg, Jules D.
Rickers-Ovsiankina, Maria
Shapero, Amy Miller
Zeichner, Abraham

Bridgeport

Fine, Harold J.
Hemmendinger, Larry
Rosner, Stanley

Hartford

Nicholas, Alma L.
Olin, Tom Davis

New Haven
Ames, Louise Bates
Hellersberg, Elizabeth
Klatskin, Ethelyn H.
Sarason, Esther K.
Sarason, Seymour B.
Schafer, Roy
Zimet, Carl N.

DELAWARE
Holanchock, George
Stonesifer, Fred
Weiss, Sheldon
Wilmington
Blessing, Harold D.
Grossman, Searles

FLORIDA
Brodie, Dorothy B.
Dean, Sidney I.
Seiler, Geraldine
Coral Gables
Chaykin, Albert
Lesser, Erwin
Spirer, Jess
Gainesville
Harlow, Justin
Radtke, William
Schumaker, Audrey S.
Schumaker, Henry C.
Jacksonville
Flemming, Edward
Penningroth, Paul W.
Miami
Allen, Robert M.
Karson, Samuel
Kushner, Malcolm
Stotz, Marion
Sarasota
Kelsey, Howard
Van Alstyne, Dorothy
Tampa
Blau, Theo.
Schaffer, Robert E.

GEORGIA
Hughes, Robert M.
Kaplan, Norman
Sisson, Boyd

ILLINOIS
Alexander, Robert H.
Barrell, Robt. P.
Klass, Walter K.
Leiden, Irving
Neuman, Gerald G.
Shulman, Harold
Tabin, Johanna Krout
Chicago
Altman, Charlotte H.
Beck, Samuel J.
Bernstein, Hilde R.
Fromm, Erika O.
Handel, Gerald
Henry, William E.
Levy, Sidney J.
Lundin, William
McFarland, Robert L.
Moore, Harriet Bruce
Rainwater, Lee
Rosenthal, Vin
Swift, Joan Woodcock
Whitman, Dorothy
Evanston
Hilkevitch, Rhea R.
Krout, Maurice H.
Stavrianos, Bertha
Vayhinger, John M.

INDIANA
Exner, John
Indianapolis
Graves, Winifred S.
Phillips, Allvertta
Stoops, Wanda Rah
Lafayette
Baker, Lawrence M.
Mendenhall, John H.
Weisskopf-Joelson, Edith
Marion
Gibby, Robert G.
Schmalzried, Newell

IOWA
Dingman, Paul R.
Low, Howard
Pena, Cesareo D.
Knoxville
Guertin, Wilson H.
Kramish, Art

KANSAS
Mueller, Adolph R.
Lawrence
Kaplin, Bert
Wright, M. Erik
Topeka
Burdick, Jeanne
Lehrer, Ruth
Mayman, Martin
Murphy, Lois Barclay
Sargent, Helen

KENTUCKY
Lexington
Johnson, Elizabeth
Lyons, Joseph

LOUISIANA
New Orleans
Crovetto, Lorraine
Font, Marion McKenzie
Fosberg, Irving A.
Odom, Charles L.
Richards, T. W.

MARYLAND
Abrams, Julian
Ball, Josephine
Eglash, Evalyn
Finn, Michael
Groff, Marne L.
Kendig, Isabelle V.
Raifman, Irving
Baltimore
Ainsworth, Mary
Farley, Julie
Feldberg, Theodore M.
Fischer, L. K.
Hawkins, Hermione
Bethesda
Hoch, Erasmus L.
Mindlin, Dorothee F.
Molish, Herman B.
Saltzman, Sara
Catonsville
Imre, Paul
Shah, Saleem A.
Silver Springs
Gravitz, Melvin
Wilkins, Verna M.

MASSACHUSETTS
Evans, John T.
Friend, Jeannette G.
Hanfmann, Eugenia
Kates, Solis L.
Lebeaux, Thelma
Stanton, Harriet
Belmont
Frank, L. K.
Wells, Frederic
Boston
Gilbert, Raymond R.
Halpern, Esther
Lawrence, James F.
Cambridge
Murray, Henry
Schaw, Louis C.
Northhampton
Bingham, David Starr
Scherer, I. W.
Stockbridge
Harris, Robert A.
Rapaport, David
Shapiro, David

MICHIGAN
Capell, Martin D.
Clapp, Chester D.
Guy, William
Leonard, A. T.
Sterne, Spencer B.
Vandenberg, Steven
Walton, Norma R.
Warren, Lurene Z.
Williams, Gertha
Yang, Andrew T.
Ann Arbor
Hand, Mary Ella
Hutt, Max L.
Schneider, Stanley F.
Wyatt, Frederick
Detroit
Barahal, George D.
Brownfain, John J.
Feinberg, Henry
Kellman, Samuel
Longley, James L.
MacBride, John L.
Mather, Elise D.
Mathews, W. Mason
Milstein, A. Freda
Papania, Ned
East Lansing
Nutt, Frances D.
Rabin, Albert
Kalamazoo
McPherson, Marion W.
Popplestone, John

MINNESOTA
MacDonald, D. Stewart
Selzer, Samuel
St. Paul
Herness, Christina
Scher, Sam C.

MISSISSIPPI
Murray, David

MISSOURI
Geil, George A.
Hilden, Arnold H.
Rook, Leroy
Ossorio, Abel Garcia

MONTANA
Wilson, Helen

NEBRASKA
Wilcott, Johanna
Norfolk
Hillson, Joseph
Taulbee, Earl S.
Wylie, Alexander

NEVADA
Dowlen, Caroline
Reno
Dana, Richard
Magnette, Jules

NEW HAMPSHIRE
King, Francis W.
St. Clair, Walter F.
Concord
Bowen, Barbara
Harmes, John

NEW JERSEY
Bosner, Jane Potter
David, Henry P.
Feldman, Irving
Frey, Harriet K.

Goodman, Morris
Kutash, Samuel B.
Lawrenson, Thomas
Morrow, J. Lloyd
Parnicky, Joseph J.
Roa-Che, Miriam
Stern, Phyllis G.

East Orange

Rockberger, Harry
Tomblen, Donald

Englewood

Brody, Claire
Cohn, Ruth C.
Junken, Elizabeth
Lieben, Beatrice

Linden

Gasorek, Kathryn
Greenberg, Pearl

Newark

Peckarsky, Adeline K.
Selig, Kalman
Steiner, Matilda

Upper Montclair

Brower, Daniel
Brower, Judith

NEW YORK

Abel, Theodora M.
Amchin, Abraham
Barringer, Benton E.
Bernstein, Mildred
Braun, Roslyn
Brechner-Maser, Sylvia
De Martino, Hugo
Eron, Leonard D.
Friedman, Howard
Gillman, Etta C.
Gurvich, Bernice M.
Hirning, L. C.
Hirsch, Janet F.
Holodnak, Helen
Jacobs, Martin
Kaplan, Herbert
Klein, Beatrice
Kornreich, Melvin
Lampl, Henry
Leopold, Julius
Levine, Abraham
Levine, Harold
Levinson, Boris M.
Libresco, Emile
MacCasland, Mrs. Barbara
Moreland, Margaret
Napoli, Peter J.
Puzzo, Frank S.
Rotman, Saul R.
Seltzer, Samuel M.
Sobol, Albert L.
Stone, L. Joseph
Sulzer, Edward
Van West, Joan
Wentling, Verda M.
Williamson, Margaret
Wilson, Mary T.

Bayside

Kornreich, Milton
Spires, Alan M.

Bronx

Antwarg, Alex
D'Angelo, Rita
Harris, William W.
Laskowitz, David
Springer, Florence E.
Teich, Marianne

Brooklyn

Abrams, Elias N.
Anderson, Helen Joan
Berrick, Myron
Dick, Frances
Kavkewitz, Henry
Levinger, Leah
Lolis, Kathleen
Machover, Karen
Machover, Solomon
Seitzman, Daniel
Siegel, Max
Silverstein, Sophie M.
Spin, Lillian
Sternberg, David
Weiss, Herman R.
Weissman, Serena
Wood, Austin B.
Zadek, Mildred

Buffalo

Fortier, Robert H.
Schubert, Herman
Wagner, Mazie E.

Elmhurst

Rosenberg, Israel H.
Steiner, Meta
Zierer, Ernest

Flushing

Harris, Albert J.
Johnson, Richard B.
Spaney, Emma

Forest Hills

Moroson, Gloria
Munz, Adam
Vaccaro, J. John

Garden City

Derner, Gordon
Frisch, Paul
Margolis, Muriel

Great Neck

Davidson, Alene
Gurvitz, Milton S.
Shatter, Florence

Jackson Heights

Kitay, Philip
Lee, Dorothy

Larchmont

Abt, Lawrence Edwin
Beisel, Lillie B.

Mt. Vernon

Nagelberg, Leo
Sharpe, Susie

New Rochelle

Bruce, Martin
Schacht, Leatrice
Wexler, Rochelle

New York City

Ackerman, Bernard
Alozery, Jessica Jervis
Anastasio, Mary M.
Aronson, Marvin L.
Auerbach, Aline B.
Balken, Eva Ruth
Baron, Samuel
Bartlett, Doris A.
Bellak, Leopold
Benjamin, Richard
Beran, Marianne
Blum, Lucille Hollander
Boles, Glen
Bondel, Gertrude
Bourke, William T.
Brown, Fred
Bry, Mae G.
Burchard, Edward M. L.
Burgemeister, Bessie B.
Calabresi, Renata
Caligor, Leopold
Carr, Arthur C.
Carroll, Clara
Chamouland, Muriel
Chu, Thomas W.
Cohen, Mathilde Weill
Cowin, Marion
Davidson, Helen H.
Deri, Susan K.
Dudek, Stephanie
Ellis, Albert
Ephron, Beulah K.
Epstein, Hans L.
Faterson, Hanna F.
Feuerburgh, Joseph
Fine, Reuben
Fuchsman, Seymour
Gaudet, E. Louise
Gaudet, Frederick J.
Getoff, Louis
Ginandes, Janet
Glass, Blanche
Goldberger, Leo
Goldfarb, William
Gondor, Lily H.
Goodman, Beverly
Goodman, Harvey
Gordon, Edward M.
Gordon, Thelma
Gottlieb, Sophie
Greene, Janet S.
Greenstadt, William
Gundlach, Ralph
Gurevitz, Saul
Haber, William B.
Hammer, Emanuel
Harris, June
Harrower, Molly R.
Hertzman, Max
Huber, Jack
Jahoda, Hedwig
Joseph, Alice
Kadis, Asya
Kahn, David
Kahn, T. C.
Kalinkowitz, Bernard N.
Kapit, Milton E.
Kass, Walter
Katz, Florine
Kaufmann, Elizabeth M.
Kemple, Camilla
Kew, Clifton
Klein, Abraham
Klein, Eva L.
Klein, George S.
Krafft, Margaret R.
Krugman, Dorothy C.
Krugman, Herbert E.
Landisberg, Selma
Leder, Ruth
Levi, Joseph
Lieberman, Janet
Mann, Edna
Markham, Sylvia
McCully, Robert
McNeill, Harry V.
Miale, Florence
Michal-Smith, Harold
Mullen, Esther
Munroe, Ruth
Neu, Ruth Warburg
Ochroch, Ruth
Palm Rose
Parker, Rolland
Paulsen, Alma
Peck, Rosalind
Porter, Lucille
Proctor, Paul W.
Ritey, Hector J.
Rodan, Henrietta Itta
Rose, Margaret E.
Rothenberg, Eleanor
Sander, Emilie T.
Scales, Margaret B.
Schachtel, Ernest G.
Schachtel, Zeborah
Schattman, Esther Preger
Schillinger, Morton
Schonbar, Rosalea Ann
Schulman, Doris
Schwartz, Arthur A.
Schwartz, Emanuel K.
Seidenfeld, Morton A.
Sherman, Murray H.
Shoben, Edward J., Jr.
Shor, Joel
Siegel, Miriam G.
Sosnoff, Miriam
Steinzor, Bernard
Stern, Kathryn W.
Symonds, Percival
Teicher, Arthur
Thetford, William
Tolmach, Regina E.
Topping, Marian Powers
Tripp, Clarence A.
Vorhaus, David
Vorhaus, Pauline G.
Warner, Samuel J.
Weinrebe, Claire

Wentworth-Rohr, Ivan
Werner, Henry
Williams, Helen
Wolf, S. Jean
Wolfson, Ruth
Woltmann, Adolf G.
Zeev, Bracha
Zucker, Luise J.

Rhinebeck
Cohn, Frederick
Colvin, Ralph

Syracuse
Orgel, Sidney
Siegel, Edward

Tomkins Cove
Krugman, Judith I.
Krugman, Morris

Wantagh
Levenstein, Phyllis
Trachtman, Gilbert

White Plains
Brody, Abraham
Brody, Gertrude
Wertheimer, Rita

NORTH CAROLINA

Grassi, Joseph
Reichenberg-Hackett, Wally
Wengate, Pauline

Chapel Hill
Baughman, Emmett
Rader, Gordon E.

NORTH DAKOTA

Kovnar, Murray
Rosenthal, Robert

OHIO

Alexander, William A.
Allen, Doris Twitchell
Appell, Melville
Baker, Corinne F.
Loehrke, Leah M.
Murphy, Rev. Kenneth
Schwerin, Erna

Cincinnati
Bieliauskas, Vytautas J.
Graham, Virginia T.
Ross, W. Donald
Strauss, Elsa L.
Whitman, Roy M.

Cleveland
Barkley, Bill J.
Gardner, Ann K.
Grier, Mary E.
Nosal, Walter
Paolino, Albert

Dayton
Bowers, Scott T.
Davis, John A.
Gallico, Margaret

Pepper Pike
Friedman, Gladys
Friedman, Ira

Shaker Heights
Grossman, Mrs. Marc
Hertz, Marguerite R.
Warshawsky, Florence

West Richfield
Reinthal, Mary E.
Witzeman, Evangeline

OKLAHOMA

Motz, Gerald

Norman
Marx, Alfred
Temerlin, Maurice

OREGON

Berliner, Anna

Portland
Ciccarello, Jennie
Filmer-Bennett, Gordon
Higginson, Gordon K.
Klopfer, Walter G.
Murstein, Bernard

PENNSYLVANIA

Abrams, Ray H.
Alexander, Herbert M.
Barratt, Emily C.
Cease, Eugene
Charny, Israel W.
Clauss, Helen
Cox, Rachel D.
Cummings, C. Peter
Dominguez, Kathryn
Dougherty, Margaret
Felzer, Stanton B.
Frear, Edgar
Hallow, William C.
Hammond, Eleanor
Heath, Douglas H.
Johnson, Thomas
Kidorf, Irwin W.
Levit, Herbert
Mazurkiewicz, Joseph
McGee, Mrs. B. F.
Morris, Charles M.
Nikel, Frank
Orr, David
Phillips, John C.
Platt, Henry
Rappaport, Sidney
Raub, Edwin S.
Ruhl, Mrs. R. Ernest
Smolinsky, Harold J.
Strait, Bennett
Waters, Thomas J.
Weiss, Emalyn R.

Bryn Mawr
Beatty, Eleanor
McBride, Katherine

Cynwyd
Brumschwig, Lily
Schulman, Irving

Harrisburg
Cox, Grace B.
Hocker, Margaret

Media
Jeffries, Helen
Morgan, Clellan L.
Morgan, Olive J.

Merion
Rappaport, Sheldon
Sless, Bernard

Norristown
Kessler, Mable G.
Ross, M. Eleanor

Philadelphia
Abrams, Jules C.
Baron, Louis K.
Bernstein, Louis
Blumstein, Molly G.
Bricklin, Patricia
Cantarow, Elizabeth S.
Copel, Sidney L.
Cunningham, Cornelia
Framo, James
Goodnick, Benjamin
Hallowell, A. Irving
Hallowell, Dorothy K.
Howland, Allan
Kleinberg, Rosalyn K.
Lewinsohn, Peter
Lit, Jack
Marker, Beatrice W.
McCloskey, E. Venita Amsler
Peters, Marie Wilson
Piotrowski, Z. A.
Plotnick, Anna
Ridge, Bradley B.
Rosen, Esther Katz
Saltzman, Marguerite R.
Steisel, Ira M.
Tuft, Carlyn M.

Pittsburgh
Arnaud, Sara H.
Barry, John
Brosin, Henry W.
Feldman, Dorothy A.
Goldbloom, Betty
Kreczkowski, Joseph
Ledwith, Nettie H.
Lepson, David
Lonstein, Murray
Newman, Joseph
Reis, Walter J.
Rivers, Mrs. Hubert M.
Schanberger, William
Shipman, William G.
Singer, Roland
Yadoff, Bernard

Wilkes-Barre
Fry, Franklyn
Fry, Martha

RHODE ISLAND

Carpenter, Kenneth E.
DeVault, Barbara

SOUTH DAKOTA

Abramson, Leonard S

TENNESSEE

Chattanooga
Mariani, Eugene
Mariani, Rose

Nashville
Billig, Otto
Kirk, Virginia
Pesetsky, Fred

TEXAS

Goolishian, Harold
Martin, Harry
Mims, Jean Giesey
Robinowitz, Ralph
Wickersham, Francis Myron

Dallas
Crasilneck, Harold B.
Gladfelter, John
Michael, Carmen Miller
Siegel, Joseph
Winer, Harold

Galveston
Foster, Austin
Gaston, Charles
MacGregor, Robert
Simkins, Lawrence

Houston
Josey, William E.
McCary, James L.
Morrison, Alfonso
Sheer, Daniel
Vinson, David
Weiss, Bertram A.

UTAH

Bramwell, Paul

VERMONT

Eldred, Donald M.
Kotkov, Benjamin
Townsend, Marjorie M.

VIRGINIA

Buck, John
Colm, Hanna
Gersten, Charles
Horlick, Reuben S.
Jeffreys, Alvis W., Jr.
Reiss, William J.
Tallent, Norman

Charlottesville
Bachrach, Arthur J.
Carter, Linda Louise

Richmond
Adams, Henry B.
Caro, Elizabeth R.
Diana, Pearl B.

WASHINGTON

Seattle
Bogardus, Helen
Schmidl, Fritz
Skeels, Dell

WEST VIRGINIA
Spencer, Betty L.

WISCONSIN
Madison
Kaplan, Henry K.
Mathias, Rudolf
Robinson, Elizabeth Foster

Smith, Margaret

DISTRICT OF COLUMBIA
Washington
Beardsley, Katherine
Broomhead, Elizabeth
Ives, Margaret
Kingsley, Leonard

Mercer, Margaret
Oettinger, Mrs. Malcolm
Peixotto, Helen
Somerville, Addison W.
Woolf, Henrietta

HAWAII
Halperin, Sidney I.

FOREIGN COUNTRIES

ARGENTINA
Schlesinger, Alicia de

AUSTRALIA
Cook, Philip H.

AUSTRIA
Forrest, Carol W.
Simon, Maria D.

BRAZIL
Lopes, Jose Leme
Ribeiro, Rene

CANADA
Carson, Marjorie
Dorken, Herbert
Ferguson, Kingsley
Francoeur, Thomas A.
Howard, J. W.
Levey, Archie
O'Reilly, P. Oliver
Record, Fr. Maurice
Stephens, Gordon M.
Wright, Morgan
Montreal
Azima, Fern
Beauchemin, Jean M.
Calvert, Margaret
Coughlin, Anne
Greenberg, Nathan
Guindon, Jeannine
Hebert, Bernard
Kalant, Mrs. Lee
Kral, V. Adalbert
Lehmann, Heinz
Malloy, Helga
Manuge, Elizabeth
Manuilow, Tatiana
Morf, Gustave
Poser, Ernest George
Rabinovitch, Sam
Wigdor, Blossom
Mt. Royal
Clerk, Gabrielle Brunet
Spindler, Joan Elizabeth
Outremont
Dufresne, Georges
Golick, Margaret

COLUMBIA
Convers, Josefina
Gaviria, Alvaro
Rodriquez-Valderrama, Jose
Wilde, Guido
Zachmann, Esther

CUBA
Lasaga, Jose

ENGLAND
Alcock, A. Theodora
Williams, Jessie M.
Wolf, Klara C.

FRANCE
Morize, Mrs. Andre

GERMANY
Hiltmann, Hildegard
Vogel, Horst

INDIA
Maiti, Haripada P.

IRELAND
Earl, C. J. C.

ISRAEL
Guiora, A. Zeev
Tel Aviv
Elizur, Abraham
Kadinsky, D.

ITALY
Ferracuti, Franco

JAPAN
Kataguchi, Vasufumi

MEXICO
Nunez, Rafael

PUERTO RICO
Umpierre, Francisco

SCOTLAND
Smith, James Innes

SOUTH AFRICA
De Villiers, David Z.

SWITZERLAND
Rorschach, Olga
Spiegelman, Marvin

VENEZUELA
Dieppa, Jorge J.
Franzetti, Rosa Padlina de

JOURNAL OF PROJECTIVE TECHNIQUES

Vol. 23 June, 1959 No. 2

• • •

EDITOR

Bruno Klopfer

EXECUTIVE EDITOR

Bertram R. Forer

ASSOCIATE EXECUTIVE EDITORS

Walther Joel
Jeanne M. Reitzell
Edwin S. Shneidman

STAFF EDITORS

Evelyn Crumpton
Florence Diamond
Norman L. Farberow
Herman Feifel
Fred J. Goldstein
James Holt
Nicholas Rose
Leonard B. Olinger
John Weir
Irla Lee Zimmerman

CONSULTING EDITORS

John E. Bell
Eugenia Hanfmann
Robert R. Holt
Lois B. Murphy
Maria A. Rickers-Ovsiankina
L. Joseph Stone

Sex Differences in a Negro Peasant Community; Montserrat, B. W. I.[1]

THEODORA M. ABEL
Postgraduate Center for Psychotherapy
and
RHODA METRAUX
Institute for Intercultural Studies

Projective tests have been found to be useful tools in investigating the personality structure and psychodynamics of individuals in cultural as well as in clinical settings. They supplement and complement the work of the cultural anthropologist in his study of personality in culture. Not only do these projective tests yield information about a cultural group under investigation but they also are effective in differentiating subgroups within a given culture and in highlighting individual differences (1).

In our study of Danio Village, a small mountain community of about 500 peasants on the island of Montserrat, British West Indies, the psychologist administered projective tests (Pfister Pyramid, Lowenfeld Mosaic, Szondi, Rorschach, and Cards 2, 4, 8 of the Baron Series[2]) to a sampling of the population; 34 males, 33 females, between the ages of 14 and 70[3]. In two previous publications resulting from this investigation we focused in the one case on intra-group variation of test responses and extent of formal education among adolescents (2), and in the other on a comparison of test results of individuals selected as deviant either by the test material, by the anthropologist, or by the community itself (9). In the present paper we shall discuss sex differences as reflected in projective material, and shall suggest what these differences might signify dynamically both from the point of view of the psychologist who administered the tests and the anthropologist who observed and interrogated the inhabitants during her field study.

Montserrat, the island on which our subjects lived, is part of the Leeward Islands Colony, and has a history of over 300 years of British government. The island is small and exceedingly rugged, and has a crowded population of some 14,000 persons—most of them peasants—sharecroppers, renters, hired laborers, small landowners, artisans, part-time fishermen, who are the colored descendants of Negro slaves imported to work the plantations. Most people—estate owners and peasants—grow Sea Island cotton, a crop with poor and uncertain cash returns; and outside government, there are few opportunities, aside from a few clerical jobs and some manual labor on roads and buildings, for work except on the land. Many men and women have been abroad—to other islands, to the Canal Zone, to the United States—and directly and indirectly Montserratians are affected not only by British, but also by American culture. They speak a dialect, locally known as "bad English," which is merging with the speech of educated British West Indians. Individualistically independent in their personal lives, they have up to now been without responsibility for their own welfare; in their view, Government and "the higher people" both "keep us down" and "ought to do something."

---

[1] Paper read at the Fifth Inter-American Congress of Psychology, Mexico City, 1957. The field work on which this paper is based was supported by grants to the anthropologist by the Social Science Research Council, and to both field workers by the Institute for Intercultural Studies.

[2] These 3 cards were used to elicit human movement responses (4).

[3] A smaller number of people were also given a second Szondi, Bender Gestalt, Caligor Eight Card Re-Drawing, Horn-Hellersberg Drawing Completion, and Stewart Ring Puzzle. In addition, a small collection was made of free drawings by children and adults. The results of these tests, as well as the Pfister Pyramid, are not included in the present paper.

Although few people in the village studied were analphabetic, few were comfortably literate, and these were scattered among the old and the young generations. Most people had been to school at some time, briefly or for a few years. A few stay until they are fifteen, the school-leaving age. In very recent years, it has been possible for an intelligent and ambitious child to transfer, with or without a scholarship, to the secondary school in town; but children are likely to leave school when they are eleven or twelve, after several years of irregular attendance and without completing more than three or four of the seven standard forms of elementary schooling[4].

This is the background of our test subjects, male and female, of Danio Village. The tests on which we are basing our discussion of sex differences are mainly the Szondi and the Rorschach. The Pyramid Test and the Mosaic reflect no detectable sex differences. But, as further background for our sex comparisons, we want to present a few results of the projective testing that suggest some of the characteristics of the sample population regardless of age or sex[5]. In the first place, these people reveal a strong dependency need to be looked after and cherished. That this need is one of oral deprivation is indicated by the references in the Rorschach to animals seeking or striving to get food. For example, there are such responses as rat, bat, or hawk "after something" (usually described as prey or food); a bird sitting under a fruit tree; a bird pecking at a fruit; a tiger after his dinner; a baby mouse up against its mother; two characters trying to lift potatoes. This need is pervasive, but it is one that is apparently not consciously acceptable. On the Szondi, the m factor is largely minus (among 65 subjects, male and female, 55 (84.5%) give a minus m). It is denied, presumably because the peasants of Danio Village have not been able to count on others, i.e., parents, to give them sufficient and consistent sustenance—food and cherishing—during their growing-up period. They must have had to, and still have to, shift for themselves in a more or less unsuccessful way. We shall discuss this point more at length when we make sex comparisons.

The ego structure suggested by the predominant Szondi responses of minus k and, particularly, minus p, is that of individuals who are oriented concretely to the external world, with little or no insight into motivational sources of action. Among the 65 subjects, 78% give minus p, while 54% respond by minus k. Forty-two percent have a minus k, minus p profile; 21% have a plus k, minus p; and 12% give open k with minus p. These profiles of consistent minus p, with predominantly minus k suggest that the stage of ego development of these people remains at the early latency period in the child, and one that is commonly found in an average population generally wherever the Szondi test has been given. At this stage the child or adult is convinced that his actions are determined by the objective character of his environment. He is not entangled in personal emotional relationships; and is more likely to be interested primarily in manipulating concrete objects[6].

Another characteristic of these people is that they are not repressed; they have outlets for their feelings and can drain off their more violent emotions. The low plus e on the Szondi, with predominant open e (only 15% give open plus e, 29% minus e, and 40% open e), as well as the ability to use color both on the Mosaic and Rorschach, support this view. On the Mosaic, all colors are employed rather frequently in making designs; forty-seven out of 64 subjects, or 73.4%, use all six colors in doing their task. On the Rorschach, nearly all subjects respond to color (FC or CF). Out of 65 subjects, only six males and six females give no color response. Color is generally expressed by some concept with a pleasantly toned aspect, i.e., wedding cake, fruit tree, flower garden, landscape, colored rocks in the sea, colored print for dress. This suggests that these people can be stimulated by, and are able in some fashion to relate to, the world around them, on a positive feeling basis. We can perhaps say that, although they are somewhat aloof (strong minus m on the Szondi), they have at least the possibility of feeling friendly toward others.

---

[4] For more complete material on Montserrat, and on Danio Village, in particular, see (7, 8, 9).

[5] The Rorschach protocols of our sample population of 65 subjects will be available in a forthcoming volume of *Primary Records in Culture and Personality*. Bert Kaplan (Ed.) The Microcard Foundation, Madison, Wisconsin.

[6] Deri (5) p. 226.

When we come to the sex differences, there are two characteristics shown by the women on the projective tests that are not shown by the men to any appreciable degree. These differences are indicated on the Szondi by the presence of a greater loading of plus d in the case of the women, and on the Rorschach, by a greater frequency of human movement (M) on the part of the women as compared to the men. On the Szondi, 61% of the females give plus d, while only 41% of the men do so. Also, women give a greater number of plus d choices than do the men. In the association between sex and height of plus score on the d factor, the X^2 is 5.5940, giving a probable error of $P<.02>.01$.

This loading of d plus suggests that although the women, like the men, deny their dependency needs on people (minus m), they accept and cling to objects (plus d). They must set some value on the material things around them, such as their houses, utensils, clothes, etc., and must strive to hold on to what they have. A plus d in isolation, of course, points to miserliness, but here it is accompanied by compensatory features such as a very high h plus, indicating acceptance of tender feelings (h plus given by 100% of the females and 91% of the males), and by pleasantly toned color responses on the Rorschach, as well as by the presence of human movement to be described below. Thus, we can suggest that the clinging to objects (plus d) is an asset, and adds a meaning and focus to the lives of these women.

The total number of Rorschach responses (R) of both men and women is small (average 13.45, SD 2.6854), and the human movement answers are limited—only one or two at most. But 64% of the women see human movement, whereas only 27% of the men do so. This difference is reliable statistically in the association of sex and number of M responses (X^2 equals 6.9780, $P <.01$)[7]. Hence, it appears that the women can make more use of their phantasy life, can employ creative imagination to some degree, and can in some way develop some inner resources. By so doing, they stabilize their relationship to their environment and to people somewhat better than do the men. Furthermore, the kinds of human movement seen are not limited to what is called "submission" (flexor movement), or "aggression" (extensor movement), but movement is described in a variety of ways: people or "Jumbies" are seen dancing, fighting, talking, boxing, pulling, "consulting", praying, kissing[8]. This suggests that the women are able to play some sort of adaptive role to others, and may act appropriately in different settings. They can "consult" (talk), they can argue and bicker, they can pray, they can show tender feelings, and can also express displeasure. They seem to be adaptable. Men appear more aloof and disagreeable (minus m on the Szondi with no accompanying plus d, and much less human movement on the Rorschach).

Adolescents of both sexes (C.A. 14-19), respond more frequently to shading (c) than do the adults, male and female[9]. In the association between presence or absence of shading response and age group, X^2 equals 9.465 $P<.01$. This suggests adolescents have more anxiety than do the adults, and are less resigned to their lot in life. Since the group, as a whole, seems able to siphon off feelings (open e and use of color on the Rorschach), the shading differences do not appear to be due to repression. It indicates the adolescents have more problems to cope with and are less able to solve them than the adults.

---

[7] X^2 with Yates correction for small groups.

[8] Baron cards, as well as Rorschach, yielded these varied responses.

However, it is our impression, from the projective material, that the adolescent girls are better able than the boys to handle their anxieties. We have only slight indications of this. In the first place, 10 out of 12 girls give plus s on the Szondi. This is not the pattern of the women; since only 3 out of 19 give a plus s factor, the remainder being distributed in the patterns of 11 zero, 2 minus, and 3 loaded s. The girls, then, are able to do something about their needs—presumably, their sexual and aggressive ones—by facing and fighting for what they want. The boys and the men also do this (28 out of 34 give a plus s). But, among the boys there is an indication that their need to assert themselves is beset with difficulties. The content of the Rorschach gives hints in this direction. For example, in the protocols of 8 of the 17 boys, there is at least one reference to a broken or mutilated object or plant, i.e., "squashed cristofine," "broken cotton plant," "tree torn by wind," "scorched grass." Two older men and 4 older women (over 40 years old) have such concepts, but no adolescent girl, younger woman, or younger man does. Also, among the adolescents, of particular frequent occurrence are references to some person or animal attacking or scaring someone, such as "man shooting gun," "evil hawk gets something," "Jumbie there to scare." Although these responses are found to some extent among all the sample male and female, 8 boys and 2 men give 8 or more descriptions of this kind in their record.

Hence, it looks as though the boys have anxiety about being able to assume their sexual role without danger or fear of failing. Like their fathers, the boys give a strong plus s on the Szondi, so that there seems to be no question of the repression of sex feelings, nor of identification with women. They can play the masculine role, but are struggling hard to find a place for themselves in this role. Like the men, they do not have a focus to their lives but, in addition, they do not seem to be accepted by men. Adolescent girls, on the other hand, seem able to identify with their mothers (plus d Szondi, M on Rorschach), and are not repressed or traumatized about their sexual role.

There is one more difference between the men and women, as revealed by the projective material, although it is possible that this difference is partly brought about by the selection of subjects. Among the men, there appear to be more deviants than among the women. There are a few Rorschach records of men that look like records of what we might call psychotics, sexually deviant, or sociopathic, as well as one or two cases of exceedingly secure and balanced individuals[10]. The records of the women vary, but not over such a wide range. Perhaps the males remaining in the community are not typical of all the males from the Island; or, it may be that the difficulties of living impose frustrations on the males that cannot be realistically solved.

Differences between sexes have been found in many studies of various cultural groups where projective techniques have been used. We need mention only two or three here. On the Island of Alor, in the East Indies, the women were found by Oberholzer (10) to reveal less intelligence than the men, but they showed greater industriousness, and their Rorschach records were more individualized. In Montserrat, the men's records are the more individualized; and we find no evidence of sex differences in intelligence and industriousness. On the Island of Truk, in Micronesia in the South Pacific, according to Sarason (6), the Rorschach and the Thematic Apperception Test revealed greater anxiety of all kinds on the part of the men as compared with the women; the women were more composed, at least outwardly, and felt more secure in confronting difficulties. The men were leaders and providers, but were prone to desperation and suicide in the face of frustration. The only similarity here, with the projective material from Montserrat, is in the women's greater adaptability to, and acceptance of, the requirements of given situations. The Montserrat men, however, are better off than the men on Truk, for they seem to be able to drain off their feelings more easily, and do not store up tension to the boiling point. (Color responses on Rorschach and open e on Szondi)

---

[9] c includes Klopfer K, k, c, except the FK vista.

[10] These deviants have been described in a previous publication (8).

In the Village of Tepoztlàn, District of Morales, Mexico, a fair sampling of children and adults were given projective tests by Oscar Lewis and his wife. The psychologist of the present paper analyzed these results, in collaboration with Calabresi (3). In this group we found repression to be very severe. Little girls seemed to have little chance to show spontaneity and to enjoy themselves as did little boys. In adolescence, sex seemed to be taboo for girls. In adulthood, the young women seem submissive and fairly content, but older women were rigid, controlling, and bossy. The men, who appear to play the dominant role in their youth, gradually seemed to lose control as they advanced in years; older men seemed afraid of impotency, and were prone to outbursts of rage. For Danio Village, we did not make an analysis of the projective results on an age basis, so that our results cannot directly be compared. We can say this, however; that in both groups, the adolescent boys were particularly disturbed, whereas there was a great difference between the two groups of adolescent girls. In Tepoztlàn the girls were repressed and inhibited — particularly, sexually; in Montserrat they were more aggressive and more expansive in expressing their sexual needs.

The sex differences in various societies can be understood if the influences on the psychosocial development of the men and women are known. It is the job of the cultural anthropologist, working in collaboration with the psychologist who does the testing, to see just what forces are brought into play during the life cycle of the individual that may create the specific similarities and differences in the personality structure of the men and women as they function in their given society. We can suggest a few points that may possibly have affected the roles played by males and females in Danio Village.

In Montserrat, as on the other islands in the Caribbean culture areas, two forms of marital relationship are recognized: religiously sanctioned or civil marriage, and "keeping;" both of which may be enduring, and either of which can easily be broken off. Usually — but not inevitably — marriage follows on a period of trial "keeping." Children, even "wild bastards" born of a brief affair, are not stigmatized by being born out of wedlock; and are customarily given their father's surname, even if the parents do not live together[11].

Households are variously composed, but unless both parents are deceased or away, the chief responsibility for child rearing falls upon the parents, especially the mother. Grandparents, sisters, older siblings, friends may help out, but they are not recognized parental alternates. Thus, even for the child who has an adequate home, the phrase, "I am an orphan". (lacking father *or* mother), has a depth of meaning. At the same time, both men and women work outside the home—in their often distant gardens, in the cotton fields, or at some job near home, or sometimes off the island—and both set a very high value on personal autonomy, one symbol of which is having some money of one's own.

---

[11] Legally, of course, only the children of married couples bear their father's name. Customarily, if a child bears its mother's name, it is assumed either that the father could not be identified, or that it may be the child of an incestuous relationship.

So, upon the mother falls a triple responsibility—for the welfare of her household, for the care of the children, and for maintaining her own security[12]. And the mother, caught between her desire to nurse her infant and care for her toddler successfully and responsibly, and to get on with her work, longs for and attempts to hasten the day when her young child stands on its own feet, eats ordinary food, and can join a group of free-ranging play fellows. For three or four months, she stays with the newborn infant, hoping it will learn to sleep quietly and to space out its feedings; later, when less help is forthcoming from others, she becomes restless and moves somewhat away from the child.

At five, children can be sent to school, if they can walk the necessary mile or two; but even earlier most of them reach a stage of self-sufficiency when, according to adults, "You can't stop them." Not the sex of the infant or small child, but its growing ability first to accept diminished care and later to fend for itself, are determining factors in the parents' ability to show affection and pride. The frail infant who cries and cannot sleep through the night without being fed; the small child whose development is slow—perhaps because of an ailment, as when a child has the yaws—may be cherished, but its mother's conflicting emotions keep the household in an ongoing state of disturbance; for her child's helpless dependence places her in a position of undesired dependence, as well[13].

Once they are on their feet and in school, relatively little is demanded of children save minimal obedience and respect for their elders. Although children perform some tasks—tethering the goats, fetching water, or leading the animals to water, or watching the house—much of what they do is voluntary (or is so phrased), and they are not regarded primarily as useful members of the household. On the contrary, adults themselves look back to childhood as a period of happy irresponsibility; and they look at their own children with a certain envy. Yet, they may take pride in a child's accomplishments, and try to modify the sting of failure, by saying, "He does the best he can." Or, "He's trying."

Sex differences in attitudes towards children become subtly apparent only in adolescence. For, then, girls are expected to stay closer to home, and parents attempt to guard the girl's virginity against secret courtship by boys and older men. Virginity, in itself, is not highly prized; rather, the emphasis is upon keeping a girl from indiscriminate sex-play, so that if, and when, she becomes pregnant the prospective father can be identified. So, for instance, a girl who has an accepted lover—one known to her parents—will not be punished for becoming pregnant. Though willingness to assume familial responsibility is an ideal character trait in a good man, it is generally felt that few men voluntarily accept paternity[14].

By the mere fact of having a child, a "girl" automatically becomes a "woman," but she can count on some help in assuming her new role from her mother. For a boy it is much less easy, in late adolescence, to become a "man," for he must demonstrate his autonomy in several spheres. And, indeed, even as adults begin to push an adolescent boy towards economic self-sufficiency, praising his efforts and criticizing the laggard as a loafer, they also condemn any of his actions by which he attempts to equalize his position vis-a-vis older people as showing "manliness," i.e., behavior unbecoming his youth, inexperience, and dependence. The adolescent boys — together with a few tomboy girls who flaunt their sexuality — are a group apart with no real ways of fitting themselves, as learners, into any other age group. This is most evident in courtship, which must be kept secret, so that no boy can turn for advice to, or learn from, the experience of his elders. As there is no one obvious way in which a boy can demonstrate his growing maturity, he must either grow in all things or else, as is more often the case, simply survive until he reaches the mid-twenties, when he is irrefutably "grown-up," irrespective of his abilities.

---

[12] In a good marital relationship, a woman can maintain her sense of autonomy by working together with her husband or "keeper", as well as by working on her own.

[13] In this situation, the mother who can leave her infant with a grandparent, while she herself goes elsewhere to support the child, may be providing a better setting for the child.

[14] Reversing the situation, a thoroughly responsible father does not hesitate to criticize his wife for having too many children.

In Montserrat, as in other Caribbean peasant cultures, the peasantry itself is a socially and economically dependent group which can do little to further its welfare as a *group*, independently. In Montserrat, people feel strongly, also, that there is little the individual—man or woman—can do to improve or alter his or her own situation; instead, improvement is seen as following on removal from the Island, itself. In fact, it is probably easier for a man to leave the Island, and for a woman to gain a subsistence livelihood on the Island—and this is the usual division, if there is one.

In a brief discussion of this kind, it is impossible to do more than to indicate areas of investigation that are important in a particular culture; certainly, it is impossible to give an adequate picture of personality development. However, as this paper suggests, it is possible to indicate how and where two overlapping types of investigation — psychological and anthropological—can complement each other and both arrive at an understanding of certain crucial features in the delineation of personality—in this instance, of sex differences, in particular.

REFERENCES

1. Abel, Theodora M. Problems in cross-cultural evaluation of individuals and groups. Actas del Primer Congreso Interamericano de Psicologia. Ciudad Trujillo, 1956, 441-455 (Text in English and Spanish).

2. Abel, Theodora M. and Métraux, Rhoda. Pruebas proyectivas en una communidad rural: Montserrat. *Criminalia*, 1956, *2*, 100-108.

3. Abel, Theodora M., and Calabresi, Renata. The People as seen by their Rorschach Test. In *Life in a Mexican village*. Tepoztlán Revisited, Oscar Lewis (Ed.), Urbana: University of Illinois, 1951.

4. Baron, S. Suggestions for an improved M-Limits technique. *J. proj. Tech.*, 1951, *15*, 371-379.

5. Deri, Susan. *Introduction to the Szondi Test*. N.Y.: Grune and Stratton, 1949.

6. Gladwin, T. and Sarason, S. B. *Truk: Men in Paradise*. Viking Fund Publications, No. 20. N.Y.: Wenner-Gren Foundation for Anthropological Research, 1953.

7. Leeward Islands Colony. Report on the Education Department for the year 1951. Antigua: Government Printing Office, 1952.

8. Métraux, Rhoda. Montserrat, B.W.I.: Some implications of suspended culture change. *Trans. N. Y. Acad. Sci.*, 1957, *20*, 205-211.

9. Métraux, Rhoda and Abel, Theodora M. Normal and deviant behavior in a peasant community: Montserrat, B.W.I. *Amer. J. Orthophychiat.*, 1957, *27*, 167-184.

10. Oberholzer, E. Rorschach's experiment and the Alorese. In *The People of Alor*, Cora Dubois (Ed.). Minneapolis: University of Minnesota Press, 1944.

Received November 10, 1958

An Experimental Analysis of the Relationship between Stimulus Structure and Behavior on the Rorschach[1, 2]

E. EARL BAUGHMAN
University of North Carolina

A person's responses to the Rorschach inkblots are dependent upon a considerable number of factors, most of which have been well analyzed by Sarason (14). Situational conditions, the set given to the subject (*S*), subjective definitions developed by the respondent, and personality factors in both *S* and the examiner (*E*) influence the verbal behavior of the *S*, as has been documented by numerous research studies.

Of first importance, however, in determining *S*'s response is the nature of the stimulus to which *S* is asked to respond. All *E*s, for example, recognized that card I tends to elicit a different class of response than does card X because of very different structural properties. Only in rare instances of extreme pathology does one find a type of perseveration that results in the same response being given to all 10 cards by an adult *S*. For most adult *S*s a change in response can be observed as the stimulus is changed.

Although it is evident that such individual card differences exist it is by no means clear as to how the various attributes of each card influence responses. The basic form of each blot is critical (see 2 and 3) in this regard, but the blots also differ in terms of color, shading, internal structure, and figure-ground contrast. The influence of such variables on response is not well understood, with the possible exception of color. A number of empirical studies have attempted to establish color effects, but adequate objective studies of shading and other blot properties are lacking. The author has reviewed the research literature on the role of the stimulus in Rorschach responses elsewhere (3) and the reader is referred to this article for background information.

The basic purpose of the work reported here is to present data which will make it possible to gain a clearer understanding of how responses to the Rorschach blots may or may not vary as a function of several blot properties. The focus is thus upon the relationship between response and stimulus structure.[3] An attempt will be made to present the data in such a way that the reader may use it to reach answers to his own questions which have not necessarily been of central concern to the writer. The presentation will also be in a form which should be useful to teachers of the Rorschach method, filling a vacuum that currently exists in the literature. Thus both research and teaching considerations have directed the organization of the presentation.

PROCEDURE

Materials: The stimulus materials used in the research are presented in Figures 1-10, with the exception of the standard colored versions of cards II, III, VIII, IX, and X. Since the im-

---

[1] This investigation was supported by a research grant (M-1027) from the National Institute of Mental Health, National Institutes of Health, Public Health Service. Publication of the findings has been supported by a grant from the University Research Council, University of North Carolina.

[2] The author is grateful to H. M. Grainer, Patricia M. Waller, S. L. Guskin, R. L. Van de Castle, Frances C. Campbell, P. B. Fiddleman, Margaret Reid, G. W. Poole, Dorothy Greulach, Elizabeth Stewart, and J. J. Mellinger for assistance in the collection and analysis of data.

[3] The reader should clearly understand that when the term structure is used henceforth in this article that it refers to those stimulus attributes other than form, unless otherwise is specified. If for example, the statement is made that "structure does not affect the frequency of the bat percept" this does not mean that form does not affect this response, only that those structural components of the stimulus other than form are not effective.

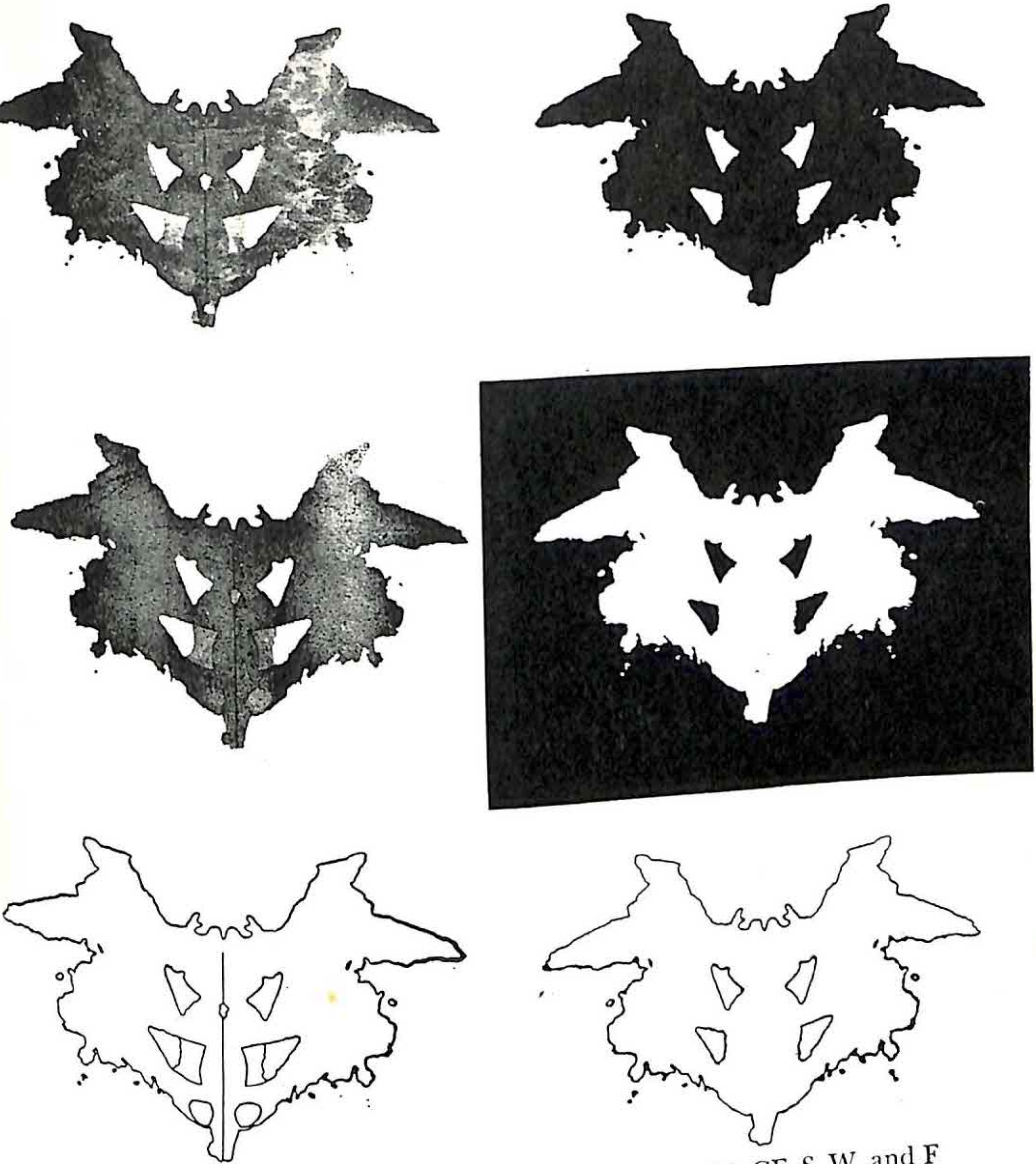


FIG. 1. Experimental Forms of Card I, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

portance of the basic form of the blots has been established, form has been held constant throughout the modification of the blots. Within this limitation of constant form one can say that the experimental stimuli represent systematic fractionations of the standard blots. The standard series of blots, possessing five colored cards, is referred to as the C or chromatic series. The remaining six series can be described as follows (and hereafter will be referred to by the letters in parentheses):

(A) *Achromatic:* Color is eliminated; remaining blot properties are retained as in series C.

(CS) *Complex Silhouette:*[4] Shading

---

[4] Due to difficulties in reproduction, the CS blots in Figures 1-10 differ in some respects from the blots actually used. All areas de-

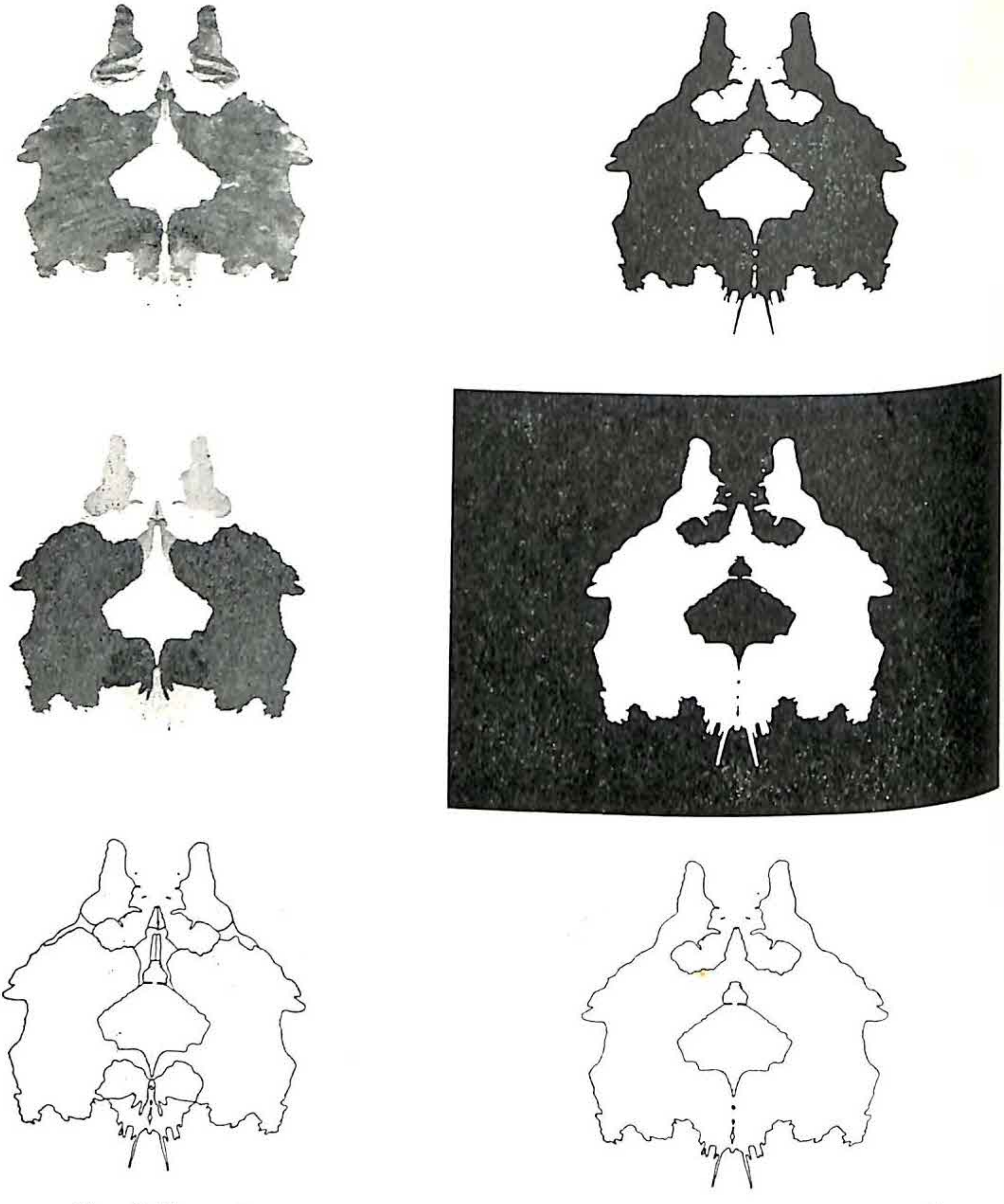


FIG. 2. Experimental Forms of Card II, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

variations are removed from series A; differentiations between major detail areas (as defined by Beck [6]) are retained by creating these areas so that they have different albedos. There is no variation in albedo within a given area, however.

(S) *Silhouette:* Uniformly grey figures; differences in albedos between adjacent areas, as found in series *CS*, are eliminated.

(W) *White:* White figures are placed on a uniformly grey background; a reversal of series S.

(CF) *Complex Form:* Figure-

---

fined on the CF series were also defined (by albedo differences) on CS although some of the reproductions fail to make this evident.

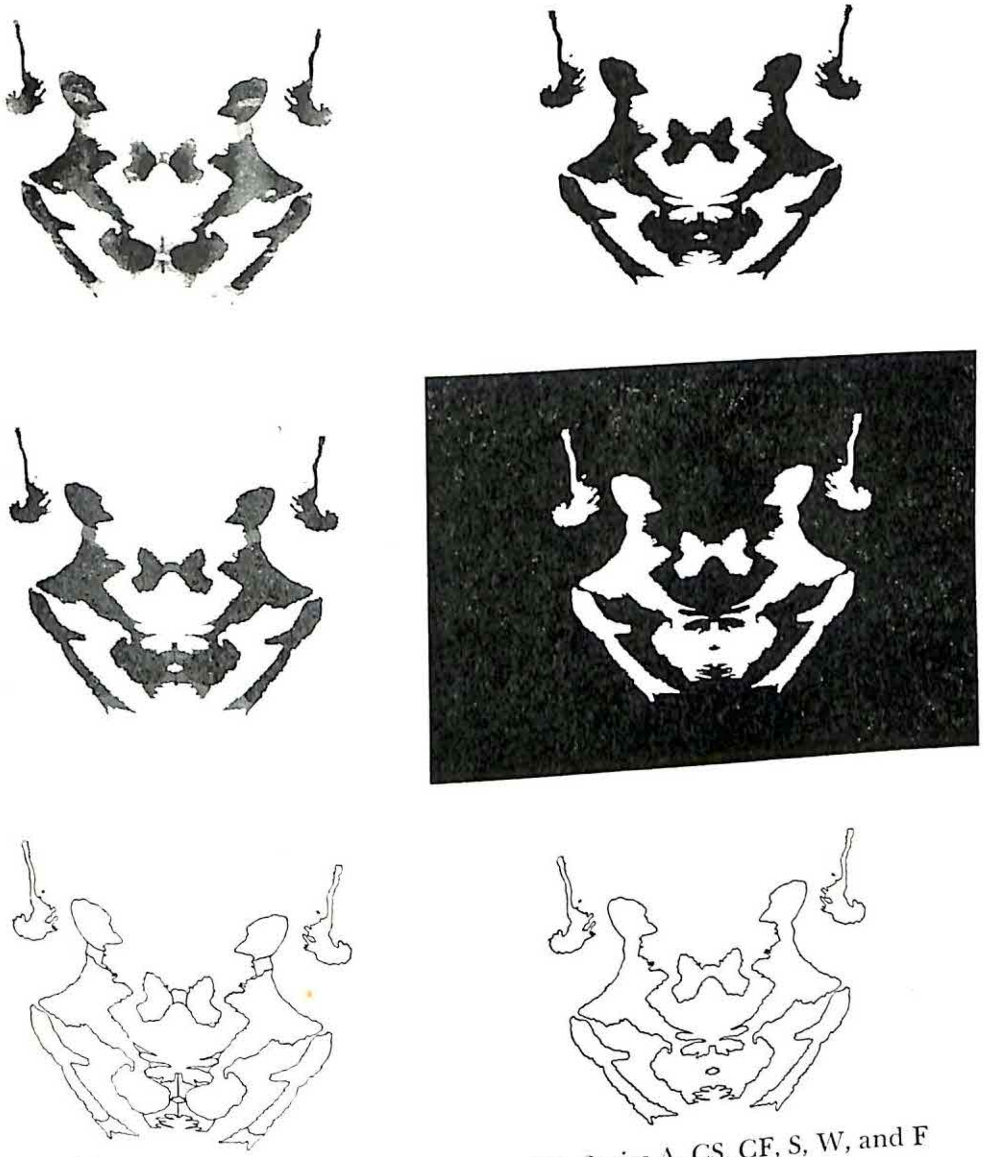


FIG 3. Experimental Forms of Card III, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

ground contrasts due to brightness differences are removed; forms of major detail areas are retained. The forms are like those of series CS.

(F) *Form:* Forms comparable to S and W are created, but figure-ground contrasts due to brightness differences are eliminated.

The basic form of the Rorschach blots is that found in series F; it is created by tracing with a stylus in such a way as to keep the stylus in constant contact with the white area of the card and a shaded or colored area. Each of the other series may be thought of as being created by the addition of "something" to these basic forms until the standard card is reached. The question then is how these successive stimulus alterations affect or fail to affect the responses of *S*s. Later on it will be shown how distributions of re-

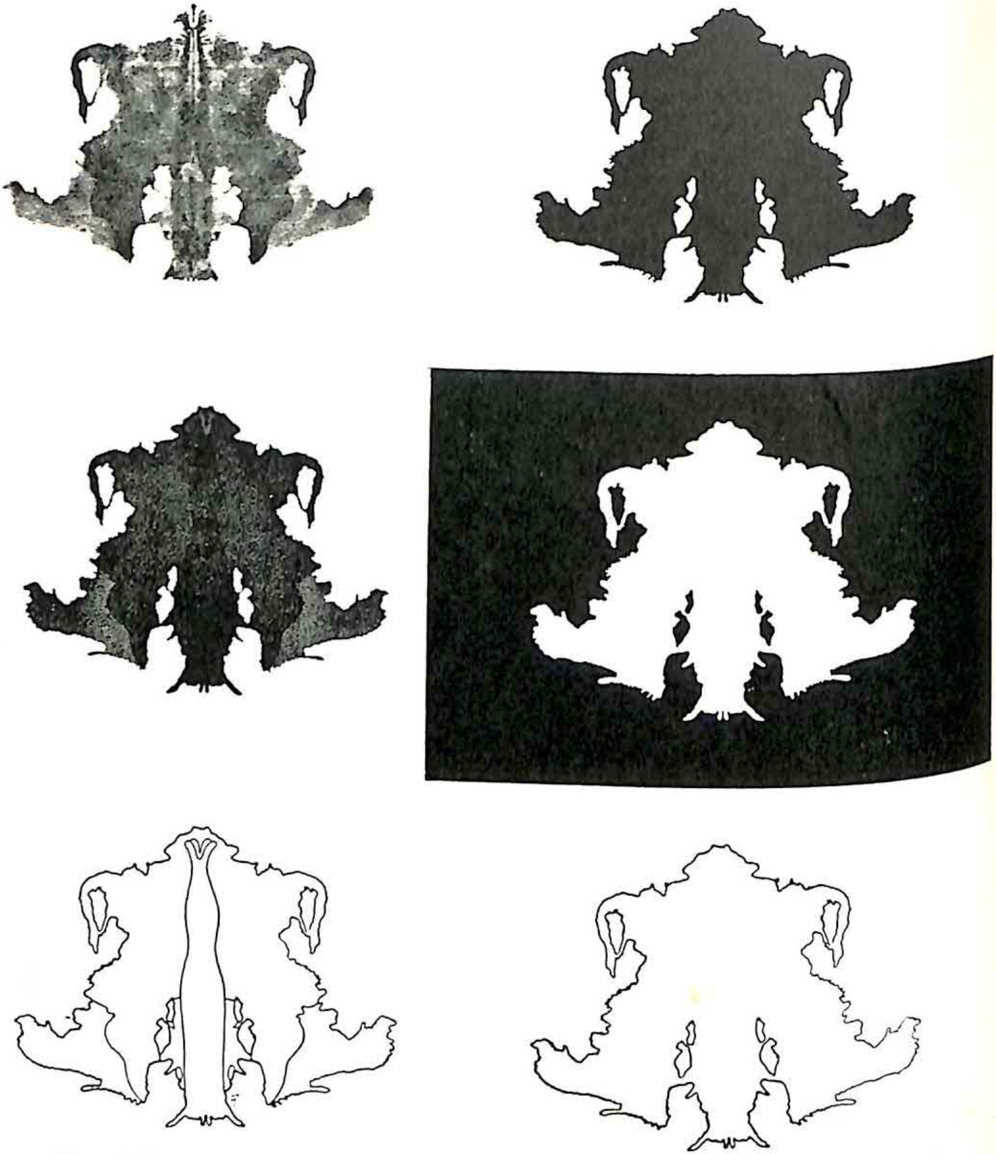


FIG. 4. Experimental Forms of Card IV, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

sponses to these series may be used to infer whether *S* has felt the impact of a particular stimulus attribute (such as color or shading) independently of any inquiry.

Series A was developed by Hans Huber publishers as described by Allen (1). The remaining series were developed by means of photographic processes (2). All modified figures were made identical in size with the standard blots and were mounted on cardboard of comparable weight.

These modified blots obviously are not the only ones that could be made and which would be of interest. Within the limitation of constant basic form, however, they make possible a reasonably thorough investigation of the relationship between blot structure and response.

Experimental Design: A total of 648

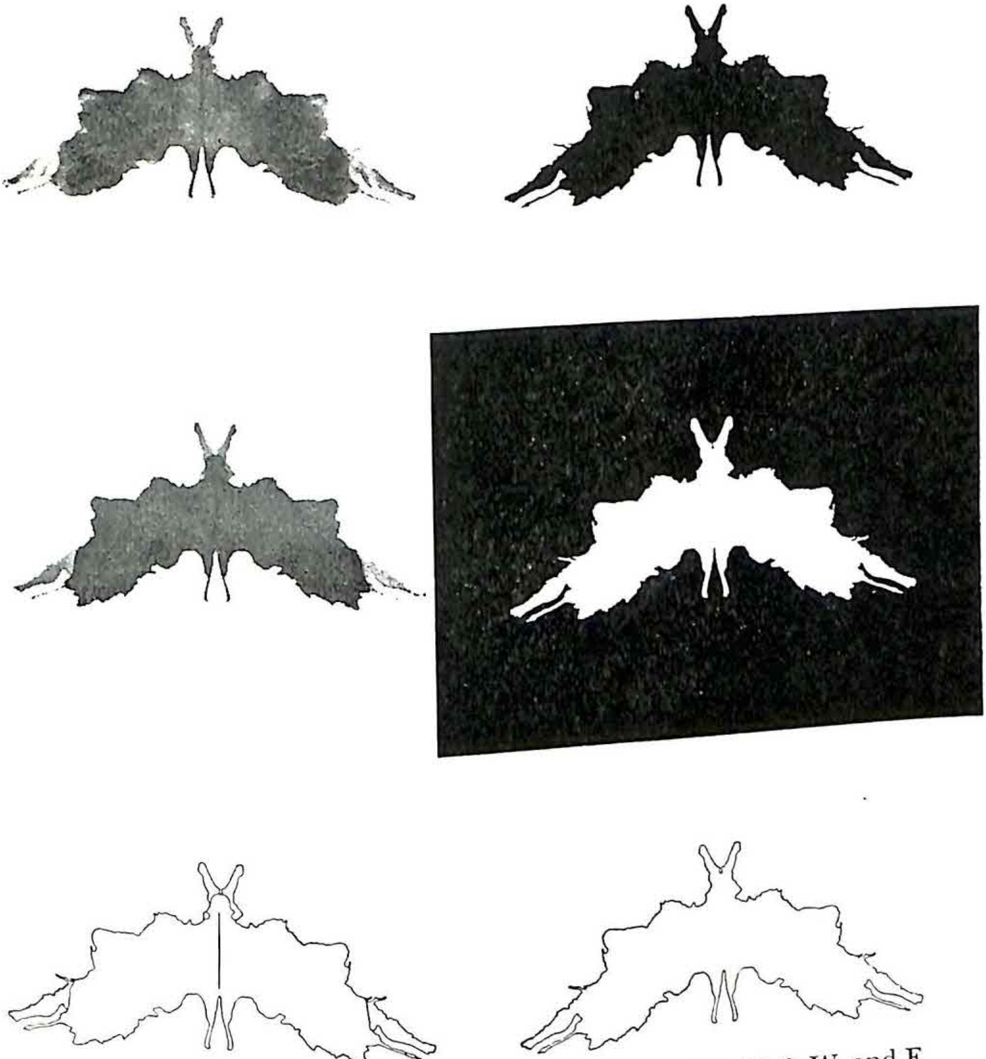


Fig. 5. Experimental Forms of Card V, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

adult *S*s participated in the experiment. These *S*s were randomly divided into eight different groups, each group being composed of 81 *S*s. *S*s in group A received the ten series A blots in the standard order, group CS the CS blots, group S the S blots, group W the W blots, group CF the CF blots, and group F the F blots. The remaining two groups received the standard Rorschach blots (i.e., series C), but the type of inquiry differed for the two groups. Group $C_{(S)}$ received the standard inquiry, as defined by Beck (6), while group $C_{(PC)}$ received a paired comparison inquiry, which has been described elsewhere (4). The paired comparison inquiry affects only color and shading scores, results which have been presented in another article (5).

After the eight groups had been formed they were compared with respect to intelligence, age, education, and sex; they did not differ significantly on these variables. Thus eight equated groups were formed, each *S* receiving a particular version of the

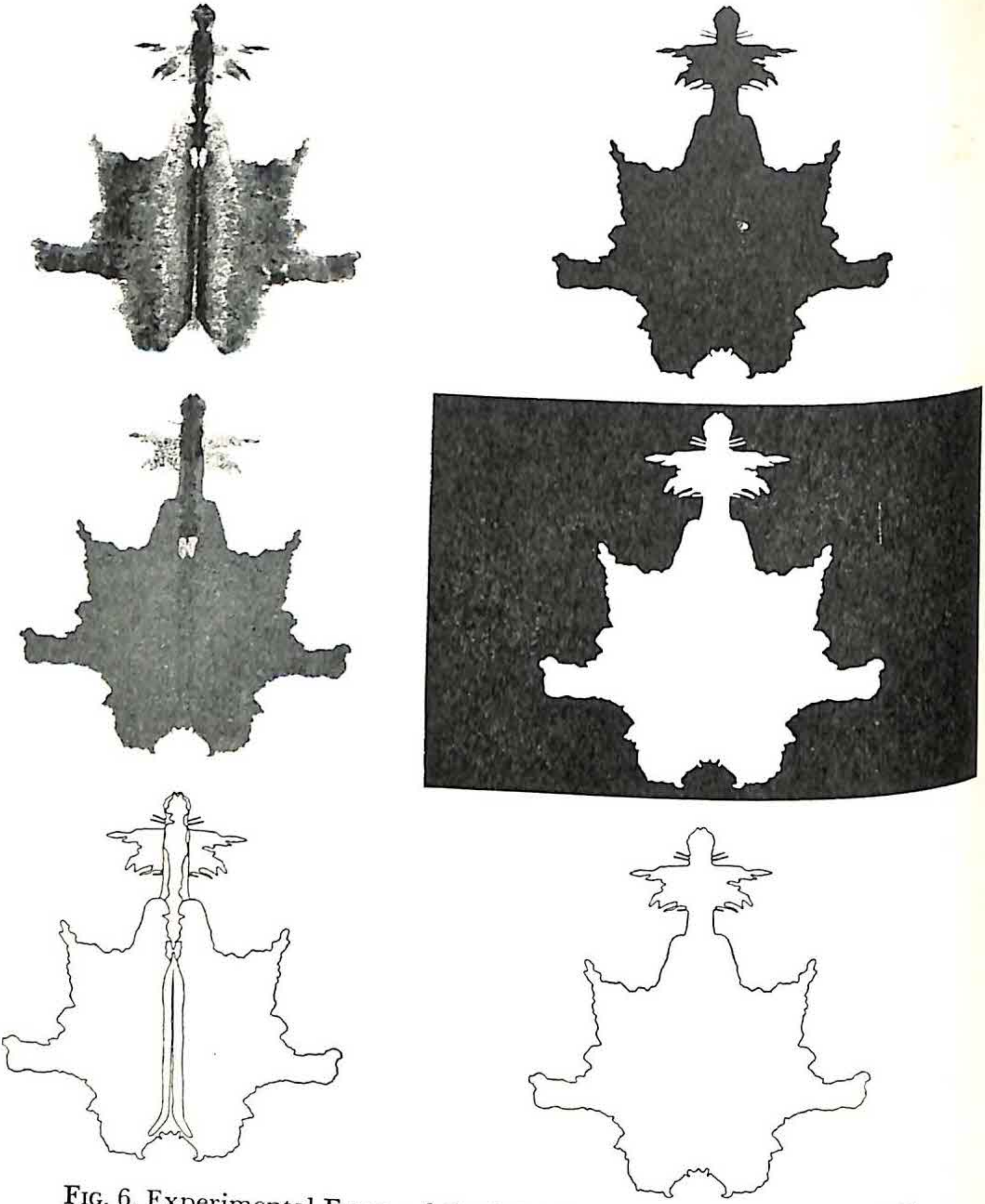


FIG. 6. Experimental Forms of Card VI, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

Rorschach dependent upon the group into which he had been placed.

Subjects: All home office employees of three insurance companies were permitted to leave their desks to participate as volunteer Ss in this research[5] *Ss* whose ages exceeded 50 years were excluded, however. Of the eligible employees, more than 85 per cent volunteered to participate in the research.

---

[5] Employee time and complete testing facilities were made available without charge by the Jefferson Standard Life Insurance Co., the Pilot Life Insurance Co., and the Southern Life Insurance Co. This most generous contribution is gratefully acknowledged, with special thanks to G. B. Phillips, Jr., J. W. Gawthrop, and T. C. Collins, Jr.

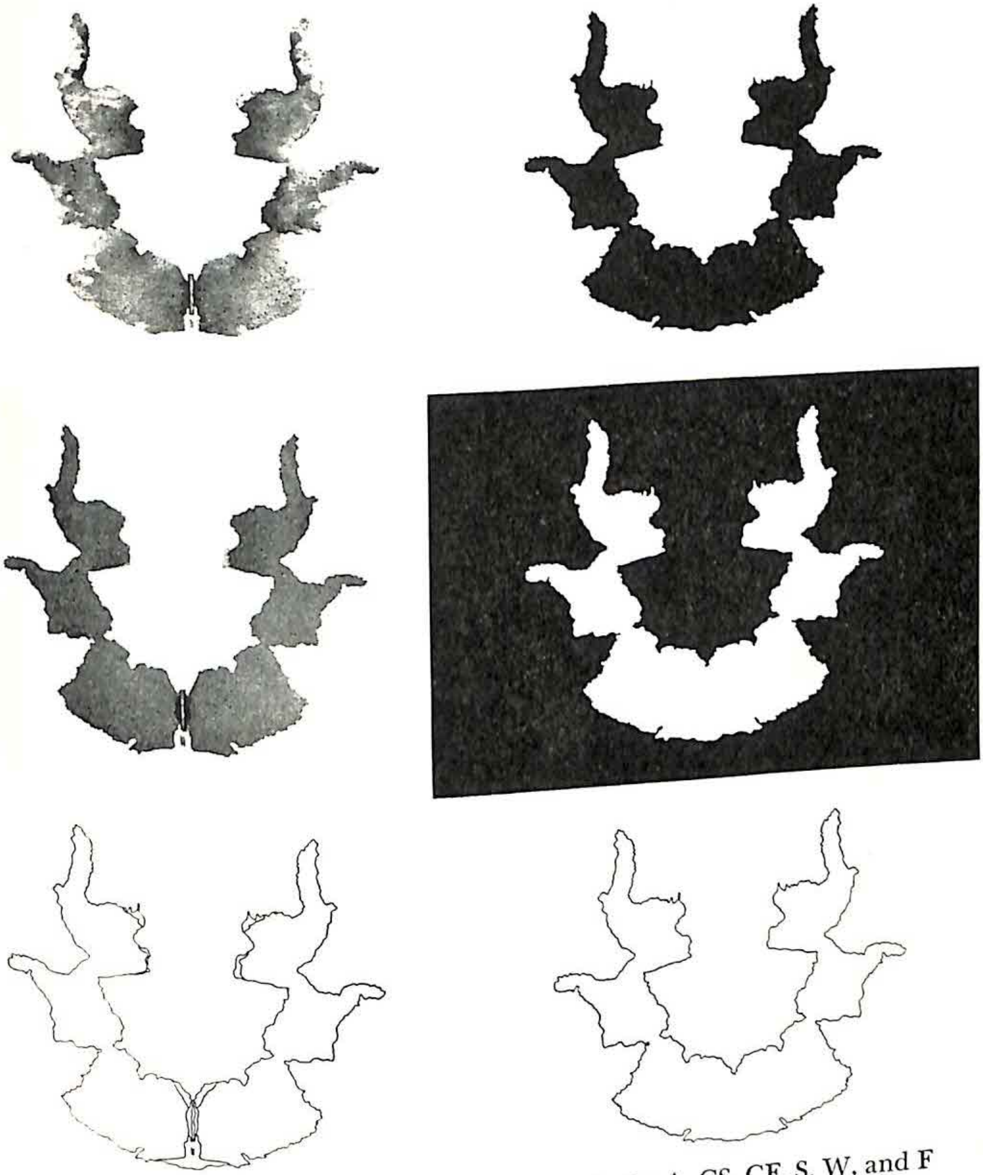


FIG. 7. Experimental Forms of Card VII, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

All occupational levels within the companies were well represented, from file clerk up through vice-president. Age, intelligence, sex and education characteristics of the groups and total sample are presented in Table I. The left side of this table includes data for all *Ss*; the right side is for a subsample in which groups were also equated for the number of responses that they gave to the blots, a procedure to be described later.

Approximately three-fourths of the *Ss* were females. Ages ranged from 17-50, with a mean in the late twenties. All *Ss* had completed high school, and about one-sixth had completed college.

Intellectual level of *Ss* was determined by individually administering the Thurstone Test of Mental Alert-

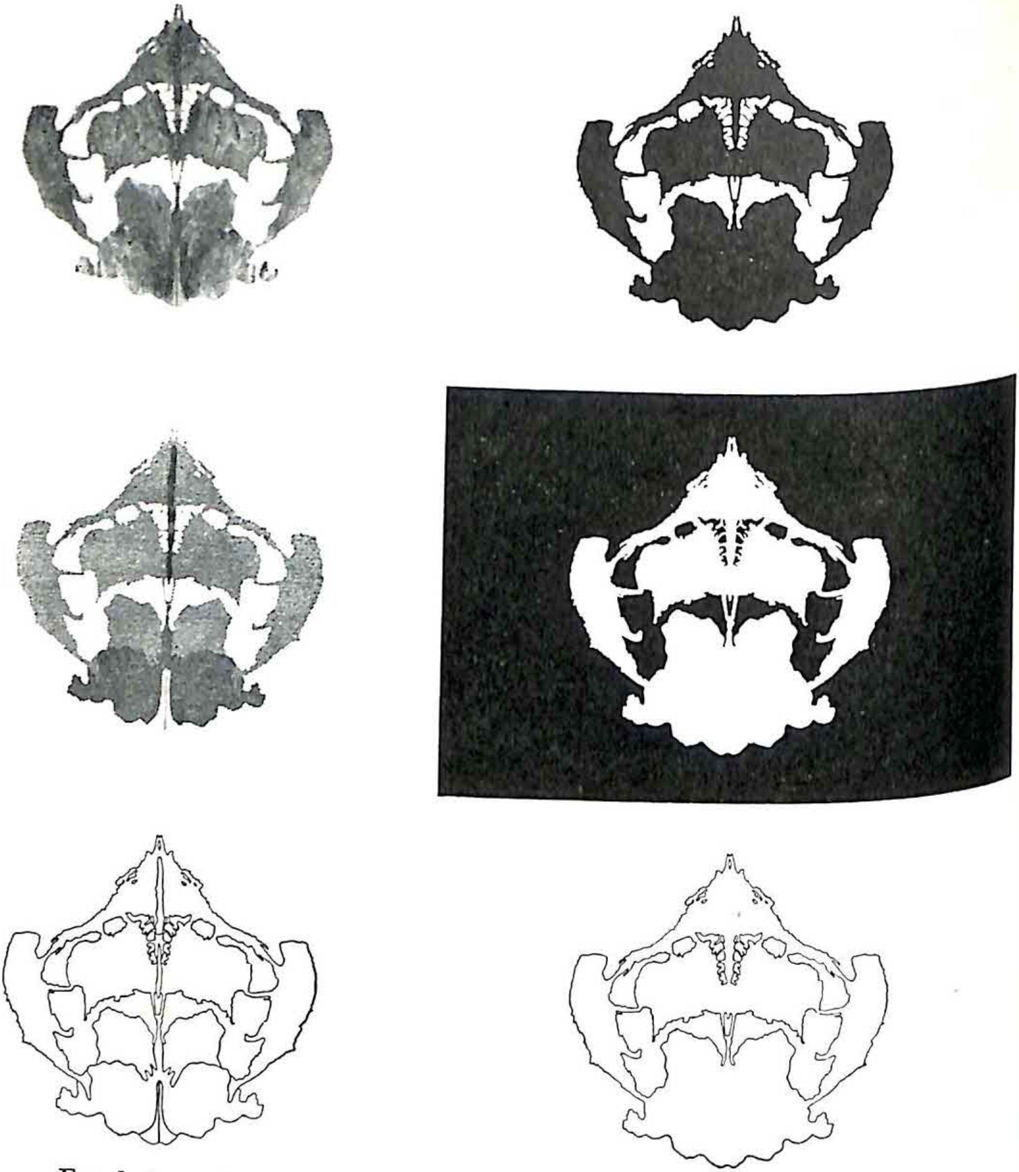


FIG. 8. Experimental Forms of Card VIII, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

ness, Form A. Raw scores on this test ranged from 14-120 with a mean score of 54.4 for the 648 *Ss*. Otis IQ (Higher Examination: Form A) scores were also available for 129 *Ss*. A regression equation indicates that a Thurstone score of 54.4 is equal to an Otis IQ of 104.3 for this group.

Significant between group variation (for both the total and matched groups) with respect to age and intelligence was ruled out by analyses of variances; chi-square analyses indicated a similar lack of significant between group variation in sex and education.

Examiners: All testing was done by two *Es*, one male, one female. The female *E* tested 19 *Ss* in each of the 8 groups while the male *E* tested 62 *Ss* in each group. *Ss* were assigned to the *Es* on a random basis during those

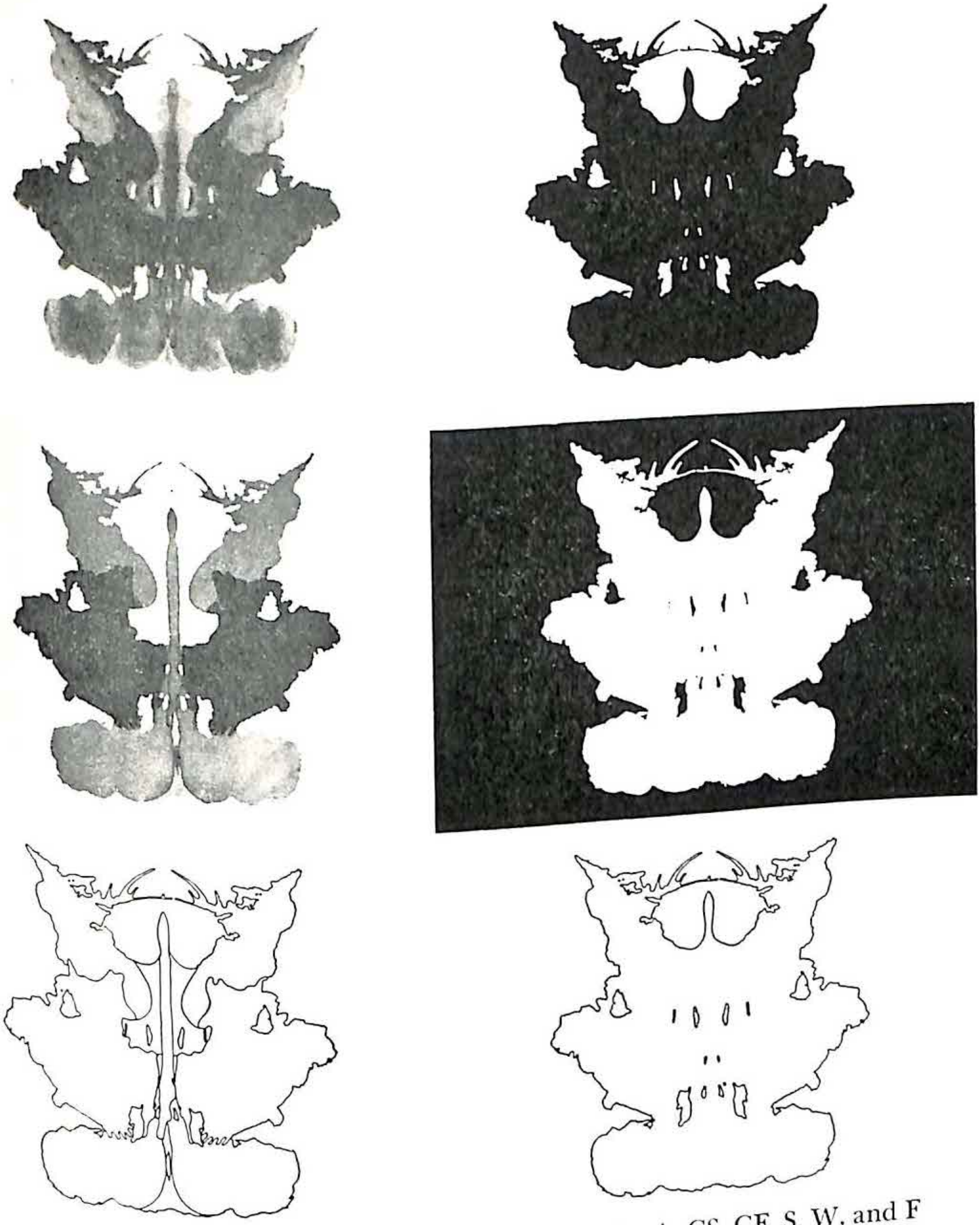


Fig. 9. Experimental Forms of Card IX, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

periods when both *E*s were testing *S*s.

Testing Procedure: *E* began the testing session by having *S* provide personal history data which were recorded on a standard form. *E* then administered one of the series of Rorschach blots ($C_{(S)}$, $C_{(PC)}$, A, CS, S, W, CF or F), the particular series having been determined in advance of contact with *S* through use of a table of random numbers. The same instructions were used for all *S*s and followed Beck (6), except for the fact that each *S* was told that he would see a series of ten designs, thus avoiding the word "inkblots." Encouragement was given *S* on the first two cards if he did not report at least two responses on each of these

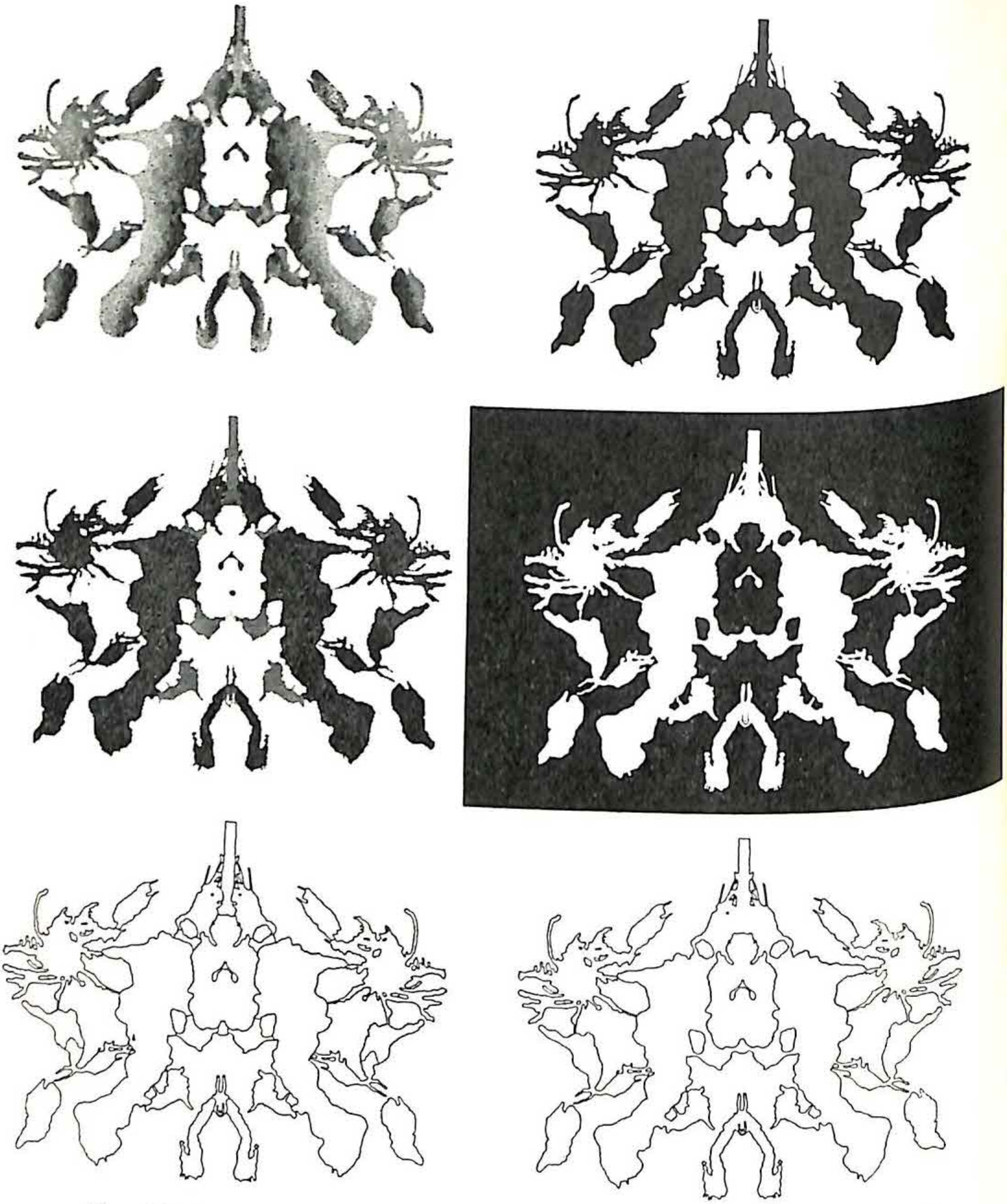


FIG. 10. Experimental Forms of Card X, Series A, CS, CF, S, W, and F Reading Top to Bottom, Left to Right.

cards; after card II no further encouragement was offered. An inquiry for location and content followed the free association; in addition a determinant inquiry was used for groups $C_{(S)}$ and $C_{(PC)}$. Upon conclusion of the inquiry each *S* was administered form A of the Thurstone Test of Mental Alertness. This concluded the testing session.

Scoring: Two scorers (not the *Es*) were used to compute psychograms; each scored an equal number of records in each of the eight groups. Scoring was done independently except for consultation on the handling of difficult scoring problems. The summary

TABLE I—*Subject Characteristics of Total Groups and Matched Groups (for Productivity) Receiving Each Stimulus Series*

		Total Groups												Matched Groups											
		C (PC)	C (S)	A	CS	S	W	CF	F	Total	F	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	F	Chi-square	p
Age	Mean (in years)	26.6	26.8	27.9	27.6	27.2	27.5	27.6	27.0	27.3	< 1.00		> .50	25.8	26.5	27.1	26.7	27.2	27.1	27.9	27.3	27.0	< 1.00		> .50
	SD	7.5	7.6	8.5	8.3	8.4	8.8	7.7	7.6	8.0				6.9	8.2	8.0	7.4	8.2	8.7	7.8	6.9	7.7			
Intelligence[a]	Mean	54.6	54.9	57.0	51.5	55.3	50.8	54.8	56.5	54.4	1.05		> .50	50.7	51.3	55.0	48.7	54.0	48.4	51.3	53.2	51.6	< 1.00		> .50
	SD	19.2	16.4	19.8	19.7	19.3	18.5	21.1	20.4	19.3				19.0	16.5	18.4	20.3	19.6	16.0	21.3	16.6	18.5			
Sex	Male	11	18	24	16	15	17	25	25	151		13.19 (df=7)	.10	4	7	7	6	6	8	10	11	59		5.87 (df=7)	.70
	Female	70	63	57	65	66	64	56	56	497				39	36	36	37	37	35	33	32	285			
Education	High School	45	46	42	43	44	44	41	35	340		20.20 (df=21)	.70	25	25	26	25	26	25	23	17	192		14.00 (df=21)	.90
	Business College	17	9	11	14	15	12	12	12	102				9	7	6	8	9	6	8	9	62			
	Part College	10	14	9	14	7	16	12	17	99				5	7	3	6	4	7	8	11	51			
	Completed College	9	12	19	10	15	9	16	17	107				4	4	8	4	4	5	4	6	39			
TOTAL	N	81	81	81	81	81	81	81	81	648				43	43	43	43	43	43	43	43	344			

[a] Table entries based upon raw scores on Thurstone Test of Mental Alertness, Form A.

psychogram for each *S* included the following scores:

R — total number of scorable responses.

W — number of whole responses.
D — number of major detail responses.
Dd — number of minor detail responses.
} following Beck (6)

S — number of responses involving an area which would be scored as white space on series C; includes complete figure-ground reversals and responses in which a background area is used along with part or all of the regular figure area.

M — number of human movement responses scorable on the basis of the free association.

FM — number of animal movement responses scorable on the basis of the free association.

m — number of inanimate movement responses scorable on the basis of the free association.

F+% — number of accurate forms divided by the sum of the number of accurate and inaccurate forms, i.e., $\frac{F+}{F+\ +F-}$; tables of Small (15) and Beck (6) used as basic references.

$\frac{8\text{-}10\%}{R}$ — number of responses on cards VIII, IX, and X divided by total R.

A% — number of animal responses divided by total R.

P — number of popular responses, following Beck (6).

T/1R — average time per first response, in seconds.

T/R — average time per response, in seconds.

Total Time — time spent responding to each card, in seconds.

In addition color and shading scores were computed for groups $C_{(S)}$ and $C_{(PC)}$; these have been reported in a separate article (5). Interscorer reliability was computed for color and shading scores; the product-moment correlation coefficients exceeded .90 for both C groups. Reliability coefficients were not computed for the other scores since, as Holtzmann (11) points out, the reliability of scoring determinants is consistently lower than that for other categories. With a high reliability for scoring color and shading it is unlikely that scoring reliabilities for the other categories would be significantly lower.

Formation of Matched Groups: Analysis of productivity indicated that R varied as a function of stimulus attributes (see Table 2); therefore it was decided to form subsamples from each group selected so as to control for this factor. This was done by means of the following steps:

1. The number of records from each group falling within intervals of five responses was tabulated.

2. The number of records to be included from each group in the matched sample was determined by taking the lowest frequency within each of these response intervals.

3. For groups having more than the minimum frequency in a response interval, records were selected at random equal to the minimum frequency.

The above procedure resulted in a subsample of 344 *Ss*, with groups matched for productivity, each group composed of 43 *Ss*, and distributed as follows:

Number of Responses (R)	*Frequency*
5 - 9	6
10 - 14	15
15 - 19	10
20 - 24	3
25 - 29	6
30 - 34	2
35 - 39	1

As with the total sample, the groups in the subsample did not differ significantly from one another with respect to the variables of age, intelligence, sex, or education (see Table I). Groups in the matched sample, however, had productivity levels significantly below those in the total group (see Table II).

Analysis of Results: Three major analyses of the data were undertaken. The first was concerned with the variation in total summary scores as a function of stimulus characteristics. The second was directed toward each of the ten cards in order to better understand variation in formal scores on that card as a function of its properties. A third analysis also focused upon the individual cards, but it was addressed to the problem of content and how the content of responses to a figure may or may not change as a result of particular blot properties. For convenience, these analyses are referred to as the total summary analysis, the card analysis, and the content analysis respectively.

The total summary analysis and the card analysis were carried out in an identical manner for the total sample of 648 *Ss* and for the subsample of 344 Ss matched for R. In Tables I-XII these are referred to as the "Total Groups" and "Matched Groups" respectively. Table XIII, presenting content tabulations, is based upon the total group.

Chi-square was chosen as the preferred method of statistical analysis for a number of reasons related to the nature of the distributions of Rorschach scores, as has been discussed in detail by Cronbach (9). These analyses were carried out by pooling all scores, selecting that score at or most near to the median, and then determining the number of Ss in each group who fell above and below this cutting point. Since groups $C_{(S)}$ and $C_{(PC)}$ responded to identical stimuli, scores of Ss in these two groups were combined for the analyses. The chi-square analyses thus involved six degrees of freedom.

RESULTS I: TOTAL SUMMARY ANALYSIS

A score was computed for each *S* over all ten cards for each scoring category as listed in Table II. This table presents the means, medians, and

TABLE II—*Summary Scores for Total Groups and Matched Groups (for Productivity) Receiving Each Stimulus Series*

Scoring Category		Total Groups										Matched Groups									
		C (PC)	C (S)	A	CS	S	W	CF	F	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Chi-square	p
R	Mn	21.1	23.1	19.8	24.7	17.8	19.4	26.0	22.0	20.17	.01	16.7	15.7	16.4	17.3	16.9	17.1	16.6	16.4	0.36	.99
	Mdn	15.6	18.0	15.9	19.7	14.3	17.2	19.7	17.0			14.8	14.7	14.8	16.0	14.3	14.8	14.7	14.0		
	SD	15.7	15.9	12.9	17.2	9.7	9.7	34.9	19.1			7.3	7.5	6.5	7.5	8.2	8.0	7.8	7.6		
W	Mn	6.0	6.8	6.4	5.6	6.4	7.0	7.4	8.6	9.22	.20	5.2	6.2	5.7	4.8	6.6	6.8	6.4	9.1	3.75	.80
	Mdn	5.1	5.8	6.1	4.2	5.8	6.4	5.8	7.8			4.6	5.9	5.6	3.6	5.6	6.1	5.6	8.1		
	SD	4.1	6.9	3.7	4.6	3.6	4.3	6.1	6.4			3.5	3.1	3.5	3.6	4.1	3.9	3.8	6.2		
D	Mn	13.7	14.5	11.3	15.6	9.7	10.2	14.5	9.7	33.48	.001	10.8	10.1	9.4	10.8	9.0	8.7	9.0	6.1	14.66	.05
	Mdn	9.9	12.8	8.9	12.9	7.6	8.7	10.9	7.1			9.4	9.0	8.1	10.8	7.2	7.9	7.1	6.0		
	SD	12.2	10.6	9.1	10.9	7.2	6.8	17.4	9.7			6.2	6.5	6.4	5.9	6.2	5.6	6.3	4.0		
Dd	Mn	1.4	1.7	2.1	4.1	1.7	2.2	3.9	3.7	22.62	.001	0.6	0.5	1.3	1.6	1.3	1.7	1.2	1.2	8.41	.30
	Mdn	0.3	0.4	0.5	1.0	0.3	0.8	1.2	1.1			0.2	0.2	0.4	0.4	0.3	0.4	0.6	0.5		
	SD	4.0	4.2	5.8	9.5	3.6	4.3	14.1	7.8			1.3	1.2	2.3	3.1	2.5	3.1	1.8	2.1		
S	Mn	0.3	0.3	0.2	0.5	0.4	1.4	1.9	1.8	84.94	.001	0.2	0.1	0.1	0.4	0.3	1.3	0.6	0.7	32.60	.001
	Mdn	0.1	0.1	0.1	0.2	0.1	0.4	0.5	0.7			0.1	0.1	0.0	0.1	0.1	0.3	0.2	0.3		
	SD	0.9	0.9	1.0	1.2	1.0	2.6	5.8	3.3			0.5	0.4	0.3	1.4	0.8	2.9	1.1	1.3		
M	Mn	1.6	1.5	1.6	2.7	2.6	2.1	2.5	1.9	24.58	.001	1.1	0.9	1.5	1.6	2.7	2.1	1.6	1.5	27.51	.001
	Mdn	1.1	1.0	1.6	1.5	2.4	1.5	1.6	1.2			0.8	0.4	1.5	1.1	2.3	1.6	1.5	1.2		
	SD	1.9	1.8	1.5	3.4	1.9	2.2	3.2	2.4			1.4	1.3	1.4	1.6	2.2	2.1	1.3	1.4		
FM	Mn	2.1	1.6	1.2	1.5	0.7	0.9	1.4	0.9	29.08	.001	1.7	1.0	0.8	1.0	0.7	0.8	0.7	0.5	15.14	.02
	Mdn	1.4	1.1	0.9	1.0	0.5	0.6	0.6	0.3			1.2	0.8	0.7	0.8	0.5	0.5	0.4	0.2		
	SD	2.2	2.0	1.5	1.7	0.9	1.2	2.6	1.5			1.9	1.2	0.9	1.1	0.9	1.0	1.0	0.9		
A%	Mn	52.0	52.3	53.2	43.1	45.1	42.1	39.8	40.2	54.34	.001	51.4	51.5	55.1	46.5	44.8	40.5	38.6	40.7	43.25	.001
	Mdn	49.2	49.6	50.0	41.8	44.1	41.8	39.9	40.2			49.0	48.9	53.0	43.9	44.4	40.8	38.4	38.4		
	SD	13.9	16.8	15.1	13.7	12.6	15.5	13.8	16.9			12.8	17.3	12.9	15.2	12.6	14.6	14.0	19.0		
F+%	Mn	86.0	87.7	85.6	87.9	86.8	86.0	82.9	83.6	10.89	.10	86.0	88.6	87.7	89.5	85.3	85.0	84.3	85.7	3.01	.90
	Mdn	87.2	87.8	87.2	88.3	88.6	88.9	84.0	85.3			88.0	88.6	88.2	89.9	88.0	87.6	81.3	87.4		
	SD	9.2	7.8	9.2	8.3	9.8	11.1	11.6	10.7			9.9	7.8	7.5	8.2	11.3	12.3	11.5	10.3		
8 · 10 / R%	Mn	37.8	36.8	32.9	34.5	33.8	36.1	33.8	34.9	11.73	.10	35.9	35.4	31.6	33.4	32.7	36.3	31.9	33.0	8.59	.20
	Mdn	37.8	36.6	33.1	33.9	35.9	36.3	34.8	34.6			36.8	35.2	30.8	32.0	35.0	36.6	32.8	32.3		
	SD	9.0	9.6	9.3	12.6	11.4	8.2	10.7	11.1			8.9	10.1	9.4	12.8	13.0	8.7	10.1	9.5		
P	Mn	5.4	5.5	5.4	5.7	5.3	5.1	3.9	3.9	32.34	.001	5.0	4.6	5.4	5.3	4.7	4.7	3.4	3.8	21.50	.01
	Mdn	4.8	5.2	5.6	5.8	5.2	5.3	3.7	4.0			4.7	4.2	5.6	5.4	4.6	4.8	3.3	3.8		
	SD	2.4	2.6	2.3	2.5	2.2	2.0	2.1	1.2			2.0	2.3	2.1	2.5	2.1	2.1	1.8	1.8		
T/1R (Secs)	Mn	24.1	27.5	26.8	25.0	22.7	30.1	24.1	23.7	9.20	.20	24.9	30.4	22.5	30.2	21.8	36.5	26.6	24.7	9.11	.20
	Mdn	19.8	22.1	21.1	17.3	15.8	22.3	20.3	16.8			19.9	25.8	20.2	20.2	15.3	24.9	25.0	15.2		
	SD	14.9	21.2	19.2	30.4	18.6	28.3	16.0	21.2			14.8	22.2	14.2	36.5	16.5	36.4	16.6	25.6		
T/R (Secs)	Mn	42.5	44.4	50.2	49.1	44.0	53.0	43.2	46.1	5.64	.50	44.6	51.1	46.2	55.0	45.7	65.5	47.6	46.7	3.83	.70
	Mdn	39.4	40.8	45.1	38.0	38.4	39.0	40.9	35.5			40.0	47.4	41.2	44.7	39.3	51.2	45.5	36.3		
	SD	65.0	22.8	25.4	40.8	28.1	45.6	22.0	37.2			19.7	26.3	22.2	35.4	30.8	57.7	24.0	40.3		
TOTAL	N	81	81	81	81	81	81	81	81			43	43	43	43	43	43	43	43		

standard deviations for each of these scoring categories, according to the series of blots received by the *S*s. The significance of between group variation is also presented in Table II, for both total and matched groups. Examination of Table II permits one to assess the extent to which the formal properties of the overall behavior are affected by blot attributes. Statistical comparison of each group with every other group for the 13 scoring categories, and discussion of these results, would necessitate the use of more space than is available here. The general and most significant trends can be seen from inspection of Table II, however.

Previous work (2,3) has suggested marked stability in summary scores when blot properties (especially color) are altered. The present research, while retaining basic form throughout, has increased the number of structural modifications as well as the number of *S*s in each of the experimental groups. Under these conditions one might anticipate that it would be possible to demonstrate significant variation in the formal aspects of perception related to stimulus composition, and the data in Table II support this expectation. Nevertheless the absolute variation in most scores from group to group is not very large. Some of the findings regarding each score will now be summarized.

R: The mean number of responses given by the *S*s to the C series was about one-third less than that reported by Beck et al (7) in their normative study. In a subsequent study of 60 neurotic patients, from the same geographical area as *S*s in the current study, and with comparable educational backgrounds, Waller (16) also reports a mean R in the low twenties $(\overline{X}_R = 20.1)$. Several factors may account for the differences between these two studies and that of Beck et al, but there is no way to specify them with certainty.

Within the experimental series R increased when discrete D areas were accentuated in the stimuli (series CF and CS), as indicated by both mean and median scores. Mean scores also suggest that R was depressed when the stimuli were made more uniform (series S, W, and A), but median scores failed to substantiate this. Variability in productivity was dampened on series S and W, and was markedly increased on CF. Chi-square was significant at the .01 level, justifying the conclusion that stimulus structure, apart from basic form, does affect productivity. The accentuation of definite major blot areas appears to be primary in affecting productivity level; increase the number of areas with well defined contours and productivity increases.

W: The mean number of whole responses for series C was slightly greater than that reported by Beck et al (7), despite the significantly lower R. The study by Fiske and Baughman (10), makes this finding understandable, however, since it shows a negligible relationship between W and R.

Both the total groups and matched groups analyses failed to reveal a significant relationship between blot structure and the W response. Variations in blot composition, aside from basic form, did not affect the overall frequency of this response. *Section II* of the results, however, will demonstrate that structure did affect *W* frequency on individual cards; also that the results in the total analysis are due to compensating differences over the ten cards.

D: The frequency of major detail responses was dependent upon blot structure, although the level of confidence in this statement is reduced as the result of the matched groups analysis. It may well be, however, that R is affected by the pull of D area responses and that the basic "pressure" within *S* is to interpret well-defined contours rather than to give as many responses as is possible.

D responses tended to be least numerous on those series which have relatively homogeneous stimuli, i.e., series S, W, F and A. Clear delineation of D areas increased responses to these areas without leading to a significant overall reduction in W responses, as noted above. It has often been observed that *Ss* typically begin with a whole response and then proceed to give detail responses. Altering internal structure does not destroy the W orientation, but it does affect subsequent D behavior.

It is also to be noted that variability in D was especially pronounced on the CF series.

Dd: Significant variation in the frequency of minor detail responses was found for the total group analysis but not for the matched group analysis. The pattern of scores in this category is difficult to interpret even for the total groups. Series CS, CF, F and W elicited more Dd responses than did the other four series, but the reasons for this are not evident.

S[6]*:* The matched groups analysis as well as the total groups analysis confirmed the expectation that space responses would be significantly affected by stimulus structure ($p = .001$). The relatively high frequencies of S responses on series CF and F were also anticipated, since these figures create much more ambiguity with respect to what is figure and what is ground.

A more interesting finding is the high frequency of space responses on series W. Many *Ss* found white figures difficult to interpret, as evidenced by their verbalizations and also by the fact that the mean response time was longer for each card in the W series than for the comparable card in series S. Objects are usually seen as standing out against lighter backgrounds, and to reverse this relationship creates difficulties for many *Ss*. In this situation a significant number of *Ss* reversed the intended figure-ground relationship and gave an S response.

M: Human movement responses were also significantly affected by blot structure, as shown by a $p = .001$ in both analyses. Research with neurotics (2) had demonstrated that the S series has an unusually high pulling power for M responses and the current data confirm this earlier finding. It is also of interest that the C series had the lowest pulling power for M.

Work of Belden and Baughman (8) suggests that the frequency of M responses is not a function of degree of contrast per se. Rather the important factor seems to be the extent to which the structure of the stimulus calls attention to an area which has a distinctly human-like form. Table XIII, for example, shows that on card II, series S two persons (usually in movement) were seen by 66 of the 81 *Ss*. In the two C groups, by comparison, only 11 *Ss* out of 162 reported seeing the whole card as two persons. By doing away with the red-black discontinuity it was much easier for most *Ss* to perceive the human forms, and these forms were usually reported as being in motion. The basic suggestion being made here is that the blot structure affects the content of the perception rather than imparting directly a feeling of movement or activity. (Detailed discussion of content variation may be found in Results III).

FM and *A%:* Stimulus structure had significant effects upon both the per cent of animal responses and the frequency of animal movement responses. Blots with shading (i.e., series C and A) clearly provoked a greater number of animal associations than did white or uniformly grey blots. The suggestion of furriness created by shading differentials is probably the causal factor. FM scores, as one would anticipate, were likewise relatively high for groups C and A, but group CS was also elevated on FM.

F+%: The groups showed marked uniformity in form accuracy; one cannot reject the null hypothesis. This finding was contrary to expectations since it was believed that some series might be experienced as more difficult than others and that in order to get "reasonable" productivity some Ss might sacrifice their standards as far as accuracy was concerned. The data, however, do not bear out this prediction. There is evidence that the series were experienced as being of differential difficulty, but Ss did not respond to this by giving a greater per cent of inaccurate percepts.

---

[6] Any response which would be scored S on series C has been scored S for the purpose of this analysis. This means of course that responses to grey areas on series W have been scored S.

8-10/R%: Several studies (3) have shown that this index is not significantly affected by the fact that the last three cards in the test are in color. The many other alterations made in this research also failed to have significant effects upon the index. The dependence upon basic form is thus underscored even further.

P: The frequency of Beck's popular responses was affected by stimulus structure. Some of these percepts were more easily seen in the non-colored cards (series A and CS), but there was a definite decrement in the outline series (CF and F). Content tables in Results III assist in clarifying effects upon particular popular responses.

T/1R and T/R: The data do not permit rejection of the null hypothesis, thus again pointing to minimal structural effects. Tempo is more a function of the interaction of personal characteristics with basic form than it is of structural properties as here defined. A more detailed analysis of time effects was carried out, however, on a card by card basis and this analysis necessitates consideration of a modification of this statement. Ss consistently took longer to form their initial responses to series W blots, for example, than to series S blots; the length of time taken to form each response was also longer on series W. By pulling out two groups for comparison we may be taking advantage of chance factors, yet the consistency of this pattern when figure is changed from grey to white is worth noting.

Summary: Analyses of total scores indicated a number of ways in which behavior in response to the Rorschach blots is affected by blot structure. To examine this dependence more closely it is necessary to go to individual card analyses.

Results II: Card Analysis

The following questions were asked regarding S's performance on each of the ten cards given to him:

1. How many responses did he give? (R)
2. Where were his responses located? (W, D, Dd)
3. Was there complete or partial reversal of figure-ground? (S)
4. Did he project movement into the blot? (M+FM+m)
5. How quickly did he give his first response? (T/1R)
6. What was the mean time taken to give each response? (T/R)
7. How long did he work on the card? (Total Time)

Scores for each S on each card were computed for the above scoring categories, and the frequencies of various scores according to stimulus series have been tabulated in Tables III-XII. There are ten tables in this analysis, one for each of the ten cards. Figure 1 presents card I and its variations. Table III summarizes the data obtained in response to these stimuli. Figures 2-10 are related in a similar fashion to Tables IV-XII. Separate tabulations are presented for the total and matched groups, as are chi-square tests of significance based upon six degrees of freedom.

Examination of these tables makes it possible to suggest answers to many problems that arise concerning the bases of behavior in response to the blots. The tables are presented in detail because it is intended that they be used as a basic point of reference in understanding each card and the behavior which it elicits. Discussion in detail of these questions is not possible, but it should be evident that comparisons between tables as well as within tables will be useful. Thus one can look at the data for a particular card

TABLE III—*Frequencies of Scores on Card I According to Stimulus Series, and Summary of Time Data*

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	1	0	3	2	2	4	3	1	16	7.07	.50	0	0	3	2	1	3	2	1	12	9.49	.20
	1	36	30	26	27	29	37	24	34	243			19	18	16	17	16	26	16	20	148		
	2	24	27	30	26	27	22	33	22	211			15	16	17	15	13	5	19	12	112		
	3 or >	20	24	22	26	23	18	21	24	178			9	9	7	9	13	9	6	10	72		
W	0	14	11	25	19	24	25	9	15	142	14.78	.05	7	7	15	12	14	17	5	9	86	13.13	.05
	1	48	47	27	38	37	40	39	35	311			25	26	17	24	19	20	23	16	170		
	2	12	11	21	21	15	9	25	21	135			8	7	9	7	7	2	12	11	63		
	3 or >	7	12	8	3	5	7	8	10	60			3	3	2	0	3	4	3	7	25		
D	0	45	40	45	39	40	44	57	53	363	14.09	.05	24	23	26	22	19	24	35	32	205	19.06	.01
	1	21	27	20	25	19	25	17	24	178			13	13	10	14	11	15	7	11	94		
	2	8	9	10	11	13	12	4	3	70			2	5	4	4	8	4	1	0	28		
	3 or >	7	5	6	6	9	0	3	1	37			4	2	3	3	5	0	0	0	17		
Dd	0	74	75	68	64	75	69	61	69	555	18.64	.01	42	42	39	36	41	38	32	38	308	19.85	.01
	1	5	6	10	12	2	10	15	6	66			1	1	3	5	1	5	11	3	30		
	2 or >	2	0	3	5	4	2	5	6	27			0	0	1	2	1	0	0	2	6		
S	0	71	64	72	65	78	67	55	50	522	44.06	.001	37	37	38	38	42	35	28	27	282	29.31	.001
	1	8	15	7	13	3	13	19	27	105			5	6	4	5	1	8	13	13	55		
	2 or >	2	2	2	3	0	1	7	4	21			1	0	1	0	0	0	2	3	7		
M+FM+m	0	65	64	77	70	70	68	81	79	574	35.52	.001	31	35	42	37	40	38	43	42	308	13.65	.05
	1	15	13	4	10	11	12	0	2	67			11	6	1	6	3	5	0	1	33		
	2 or >	1	4	0	1	0	1	0	0	7			1	2	0	0	0	0	0	0	3		
T/1R (Secs)	Mn	19.0	16.5	18.3	16.4	15.7	20.3	16.7	15.6		8.70	.20											
	Mdn	12.3	12.2	13.6	9.9	11.6	12.8	11.6	10.1														
	SD	17.6	17.1	17.1	20.1	12.8	18.9	16.8	16.7														
T/R (Secs)	Mn	37.0	36.6	35.0	39.2	31.8	45.2	40.4	36.1		3.05	.90											
	Mdn	31.6	29.3	31.1	30.8	28.7	36.6	33.8	28.8														
	SD	26.4	25.1	20.9	32.5	18.6	30.0	25.9	24.8														
Total Time (Secs)	Mn	66.8	69.8	71.7	76.9	60.9	70.3	78.2	62.6		9.40	.20											
	Mdn	55.3	56.8	65.5	63.0	48.0	61.1	61.3	58.9														
	SD	42.7	48.7	46.2	57.3	43.5	35.6	51.0	34.0														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

TABLE IV—Frequencies of Scores on Card II According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	6	8	2	5	3	2	8	6	40			4	7	0	3	2	1	5	2	24		
	1	32	30	43	31	53	42	23	27	281	22.27	.01	18	19	25	23	28	24	16	19	172	5.51	.50
	2	26	23	20	16	15	18	22	25	165			11	12	9	8	8	7	14	13	82		
	3 or >	17	20	16	29	10	19	28	23	162			10	5	9	9	5	11	8	9	66		
W	0	56	53	18	42	9	13	36	18	245			35	27	7	23	6	7	20	7	132		
	1	20	23	54	31	60	52	27	42	309	125.75	.001	7	13	30	18	30	29	16	21	164	84.17	.001
	2	4	4	8	6	12	13	9	14	70			1	3	5	1	7	6	5	10	38		
	3 or >	1	1	1	2	0	3	9	7	24			0	0	1	1	0	1	2	5	10		
D	0	20	21	47	28	67	57	34	49	323			9	17	30	18	37	30	23	33	197		
	1	34	28	23	25	11	18	24	19	182	103.07	.001	20	15	6	16	5	8	10	7	87	56.85	.001
	2	15	19	8	11	3	4	8	9	77			7	10	6	4	1	3	6	3	40		
	3 or >	12	13	3	17	0	2	15	4	66			7	1	1	5	0	2	4	0	20		
Dd	0	72	78	71	69	73	65	72	62	562			38	41	38	39	39	34	41	36	306		
	1	7	1	7	5	4	10	8	13	55	16.46	.02	4	1	4	2	2	7	2	5	27	8.28	.30
	2 or >	2	2	3	7	4	6	1	6	31			1	1	1	2	2	2	0	2	11		
S	0	71	66	75	65	69	51	56	40	493			37	39	40	36	37	29	31	27	276		
	1	9	13	6	14	10	19	22	30	123	64.52	.001	6	3	3	6	5	7	11	12	53	23.76	.001
	2 or >	1	2	0	2	2	11	3	11	32			0	1	0	1	1	7	1	4	15		
M+FM+m	0	40	49	35	54	25	33	53	44	333			27	32	16	35	14	18	33	23	198		
	1	37	28	41	26	56	47	22	35	292	34.57	.001	15	11	24	8	29	24	8	20	139	43.69	.001
	2 or >	4	4	5	1	0	1	6	2	23			1	0	3	0	0	1	2	0	7		
T/1R (Secs)	Mn	22.3	26.0	22.9	23.5	18.1	24.7	23.0	20.9														
	Mdn	18.4	15.3	15.3	13.8	9.5	16.2	16.6	14.1		4.57	.70											
	SD	18.1	38.0	22.2	32.5	20.8	26.7	19.7	18.6														
T/R (Secs)	Mn	47.2	53.6	53.2	51.6	50.4	53.6	44.4	42.6														
	Mdn	38.8	43.7	45.8	36.9	42.7	48.4	40.1	33.7		10.51	.20											
	SD	28.6	50.5	29.1	48.0	30.2	34.7	27.3	29.1														
Total Time (Secs)	Mn	77.9	92.5	83.8	95.4	65.1	77.9	87.3	78.2														
	Mdn	73.3	77.8	79.7	76.1	55.9	68.3	69.8	65.2														
	SD	40.6	74.3	50.1	89.4	40.0	45.4	54.5	52.0		20.23	.01											
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

TABLE V—*Frequencies of Scores on Card III According to Stimulus Series, and Summary of Time Data*

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	2	4	1	4	5	4	1	8	29	6.88	.50	0	2	0	3	3	3	0	5	16	2.74	.90
	1	34	25	34	23	36	32	28	28	240			24	17	18	18	15	19	18	18	147		
	2	18	22	19	27	21	20	23	26	176			9	15	12	17	15	11	15	16	110		
	3 or >	27	30	27	27	19	25	29	19	203			10	9	13	5	10	10	10	4	71		
W	0	73	72	72	76	69	65	73	62	562	16.18	.02	39	40	40	41	36	36	37	32	301	13.03	.05
	1	7	7	9	4	12	14	7	18	78			4	3	3	2	7	7	6	10	42		
	2	1	1	0	1	0	2	1	1	7			0	0	0	0	0	0	0	1	1		
	3 or >	0	1	0	0	0	0	0	0	1			0	0	0	0	0	0	0	0	0		
D	0	5	7	3	7	12	18	5	20	77	8.22	.30	1	4	1	4	6	10	3	12	41	5.58	.50
	1	33	29·	33	24	34	23	31	24	231			24	19	18	19	16	14	18	17	145		
	2	19	17	22	24	16	19	21	21	159			10	11	13	16	11	12	14	11	98		
	3 or >	24	28	23	26	19	21	24	16	181			8	9	11	4	10	7	8	3	60		
Dd	0	76	73	75	75	79	75	68	73	594	10.49	.20	41	41	41	42	43	39	41	42	330	. . .*	
	1	5	8	4	3	1	5	9	7	42			2	2	2	0	0	3	2	1	12		
	2 or >	0	0	2	3	1	1	4	1	12			0	0	0	1	0	1	0	0	2		
S	0	75	71	72	78	73	75	78	71	593	7.77	.30	42	40	40	42	40	39	42	39	324	. . .*	
	1	6	8	8	1	7	5	1	9	45			1	2	3	0	2	3	1	4	16		
	2 or >	0	2	1	2	1	1	2	1	10			0	1	0	1	1	1	0	0	4		
M+FM+m	0	37	39	47	31	40	58	25	43	320	34.38	.001	22	27	26	21	23	30	12	25	186	17.88	.01
	1	36	31	31	43	35	20	48	34	278			19	13	16	22	16	12	30	18	146		
	2 or >	8	11	3	7	6	3	8	4	50			2	3	1	0	4	1	1	0	12		
T/1R (Secs)	Mn	21.7	25.5	27.3	18.6	20.2	26.7	19.0	20.3		17.43	.01											
	Mdn	15.3	17.7	20.5	12.2	15.5	18.8	11.9	14.2														
	SD	19.1	25.4	24.3	23.5	18.4	24.1	18.2	20.0														
T/R (Secs)	Mn	42.3	48.5	53.5	43.7	45.4	51.2	43.8	46.6		3.80	.80											
	Mdn	38.2	38.4	39.0	36.4	41.3	46.3	37.2	36.8														
	SD	20.9	33.8	38.3	28.9	30.1	31.4	26.3	32.4														
Total Time (Secs)	Mn	83.8	97.2	94.7	94.7	70.0	85.8	91.5	81.9		10.37	.20											
	Mdn	74.5	78.7	81.4	79.5	59.2	72.6	69.9	66.1														
	SD	56.2	65.8	62.2	73.5	36.5	46.7	71.2	54.8														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

*Expected frequencies less than 3

TABLE VI—Frequencies of Scores on Card IV According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	9	3	8	9	2	3	6	6	46			6	1	5	7	1	3	3	5	31		
	1	43	41	39	33	48	41	31	30	306	9.65	.20	23	26	24	20	25	26	23	18	185	2.79	.90
	2	13	20	18	20	13	20	18	27	149			6	11	9	10	7	8	8	13	72		
	3 or >	16	17	16	19	18	17	26	18	147			8	5	5	6	10	6	9	7	56		
W	0	30	29	33	35	28	24	38	19	236			17	15	15	21	16	12	21	9	126		
	1	43	40	42	33	47	45	36	41	327	13.73	.05	24	21	23	16	22	27	19	22	174	11.57	.10
	2	5	9	4	9	5	11	2	16	61			1	7	4	4	4	4	2	9	35		
	3 or >	3	3	2	4	1	1	5	5	24			1	0	1	2	1	0	1	3	9		
D	0	47	40	45	38	41	48	28	56	343			26	25	28	23	20	28	20	33	203		
	1	18	24	18	24	25	16	21	12	158	22.42	.01	7	13	12	15	17	9	11	8	92	13.01	.05
	2	11	9	9	12	8	14	22	8	93			8	1	1	4	3	5	10	2	34		
	3 or >	5	8	9	7	7	3	10	5	54			2	4	2	1	3	1	2	0	15		
Dd	0	73	75	77	71	72	68	69	66	571			40	42	41	40	39	39	38	41	320		
	1	6	2	2	5	6	11	9	9	50	10.83	.10	2	1	1	2	3	4	5	1	19	3.59	.80
	2 or >	2	4	2	5	3	2	3	6	27			1	0	1	1	1	0	0	1	5		
S	0	80	78	81	77	77	73	77	76	619			43	43	43	42	42	41	42	42	338		
	1	1	2	0	3	4	8	3	4	25	11.55	.10	0	0	0	0	1	2	1	1	5	. . .*	
	2 or >	0	1	0	1	0	0	1	1	4			0	0	0	1	0	0	0	0	1		
M+FM+m	0	65	71	75	66	54	63	75	61	530			37	38	40	39	25	30	43	38	290		
	1	12	8	6	12	27	17	6	15	103	28.80	.001	4	5	3	4	18	12	0	4	50	42.00	.001
	2 or >	4	2	0	3	0	1	0	5	15			2	0	0	0	0	1	0	1	4		
T/1R (Secs)	Mn	24.0	31.0	30.3	34.3	19.3	31.2	24.7	25.2														
	Mdn	16.2	19.9	23.7	21.5	15.1	21.1	18.6	13.4		15.92	.02											
	SD	22.0	33.7	25.3	41.4	15.7	33.2	20.0	37.4														
T/R (Secs)	Mn	46.9	55.8	54.0	58.0	41.3	55.2	44.7	44.0														
	Mdn	38.7	44.5	46.2	46.8	35.5	39.7	38.6	29.0		12.41	.10											
	SD	29.7	37.8	32.4	47.4	25.8	45.2	25.1	45.9														
Total Time (Secs)	Mn	73.5	88.8	87.5	96.2	60.4	84.8	91.7	72.7														
	Mdn	60.0	69.7	71.2	74.0	52.2	69.2	70.5	56.9		16.38	.02											
	SD	57.9	71.3	67.3	75.8	39.6	55.7	71.5	58.3														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

*Expected frequencies less than 3

TABLE VII—*Frequencies of Scores on Card V According to Stimulus Series, and Summary of Time Data*

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	2	1	0	0	5	1	5	6	20			2	1	0	0	5	1	2	3	14		
	1	53	47	51	35	48	42	40	37	353	13.71	.05	30	31	30	21	22	26	27	23	210	9.41	.20
	2	14	19	17	21	17	23	16	21	148			7	8	10	15	13	12	10	10	85		
	3 or >	12	14	13	25	11	15	20	17	127			4	3	3	7	3	4	4	7	35		
W	0	17	12	7	21	18	15	14	18	122			10	7	6	13	13	6	6	8	69		
	1	51	59	63	49	51	57	53	43	426	9.61	.20	27	33	33	23	22	33	33	25	229	7.42	.30
	2	10	8	11	9	12	6	10	14	80			6	3	4	6	8	2	4	6	39		
	3 or >	3	2	0	2	0	3	4	6	20			0	0	0	1	0	2	0	4	7		
D	0	52	51	56	35	57	50	46	53	400			28	30	31	21	31	30	31	32	234		
	1	20	18	16	25	10	18	19	15	141	17.74	.01	12	10	9	16	6	11	7	7	78	9.14	.20
	2	5	5	7	10	10	10	11	10	68			2	2	3	4	5	2	4	4	26		
	3 or >	4	7	2	11	4	3	4	3	39			1	1	0	2	1	0	1	0	6		
Dd	0	52	51	56	35	57	50	46	53	400			42	41	42	39	41	40	42	42	329		
	1	20	18	16	25	10	18	19	15	141	17.80	.01	1	2	0	4	2	2	1	1	13	. . .*	
	2 or >	9	12	9	21	14	13	16	13	107			0	0	1	0	0	1	0	0	2		
S	0	79	77	80	81	79	76	79	80	631			43	43	43	43	42	41	43	43	341		
	1	2	4	1	0	2	4	1	1	15	. . .*		0	0	0	0	1	1	0	0	2	. . .*	
	2 or >	0	0	0	0	0	1	1	0	2			0	0	0	0	0	1	0	0	1		
M+FM+m	0	58	57	65	75	69	70	67	71	532			33	36	36	39	34	38	39	41	296		
	1	19	22	15	5	11	10	10	7	99	23.15	.001	9	7	7	4	8	4	3	1	43	9.20	.20
	2 or >	4	2	1	1	1	1	4	3	17			1	0	0	0	1	1	1	1	5		
T/1R (Secs)	Mn	17.8	22.3	15.9	16.0	17.9	20.0	16.8	16.4														
	Mdn	11.8	12.1	9.2	8.1	9.9	12.0	10.2	9.5		7.71	.30											
	SD	18.4	30.1	18.1	26.7	20.4	23.1	18.4	19.9														
T/R (Secs)	Mn	40.3	45.3	43.2	38.2	37.3	42.6	42.2	37.2														
	Mdn	33.9	35.0	35.5	28.4	28.5	32.7	37.6	28.0		13.41	.05											
	SD	27.3	36.6	26.6	33.2	28.2	32.2	26.5	30.6														
Total Time (Secs)	Mn	61.1	76.4	64.1	74.0	54.2	69.0	80.6	64.6														
	Mdn	50.5	54.4	51.6	54.8	45.2	53.7	56.1	46.5		2.35	.90											
	SD	48.4	67.9	52.4	64.4	42.1	50.4	82.0	53.7														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

*Expected frequencies less than 3

TABLE VIII—Frequencies of Scores on Card VI According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	13	8	10	11	11	5	11	6	75			11	4	6	8	6	4	9	3	51		
	1	41	34	43	30	46	43	30	44	310	10.62	.20	22	23	24	21	25	27	19	28	189	0.89	.99
	2	13	19	14	16	15	20	20	17	134			7	11	8	9	11	7	11	8	72		
	3 or >	14	20	14	24	9	13	20	14	129			3	5	5	5	1	5	4	4	32		
W	0	45	47	44	47	38	31	57	35	344			27	21	25	29	26	17	32	15	192		
	1	34	27	34	26	37	39	15	34	246	23.00	.001	15	19	18	10	13	21	7	23	126	21.12	.01
	2	1	6	3	5	5	7	6	10	43			0	3	0	3	4	3	4	4	21		
	3 or >	1	1	0	3	1	4	3	2	15			1	0	0	1	0	2	0	1	5		
D	0	37	29	40	35	47	42	25	44	299			22	18	22	23	21	26	18	28	178		
	1	27	28	23	16	23	26	26	25	194	17.97	.01	15	20	12	11	17	13	15	11	114	7.23	.30
	2	9	13	10	16	9	8	18	8	91			5	4	6	7	5	3	8	4	42		
	3 or >	8	11	8	14	2	5	12	4	64			1	1	3	2	0	1	2	0	10		
Dd	0	74	68	69	60	73	74	71	72	561			42	38	37	37	40	41	41	42	318		
	1	4	10	9	14	6	6	6	3	58	14.10	.05	1	5	4	6	3	2	2	1	24	7.82	.30
	2 or >	3	3	3	7	2	1	4	6	29			0	0	2	0	0	0	0	0	2		
S	0	81	80	80	81	81	80	79	80	642			43	43	42	43	43	43	43	43	343		
	1	0	1	1	0	0	1	1	1	5	. . .*		0	0	1	0	0	0	0	0	1	. . .*	
	2 or >	0	0	0	0	0	0	1	0	1			0	0	0	0	0	0	0	0	0		
M+FM+m	0	71	70	76	76	77	71	62	71	574			39	40	41	42	40	37	37	43	319		
	1	7	9	2	5	4	9	14	8	58	19.89	.01	3	3	1	1	3	6	6	0	23	11.18	.10
	2 or >	3	2	3	0	0	1	5	2	16			1	0	1	0	0	0	0	0	2		
T/1R (Secs)	Mn	27.1	35.9	29.3	34.8	22.5	34.6	30.7	24.3														
	Mdn	19.0	24.8	20.2	21.8	14.9	23.0	20.5	14.8		4.56	.70											
	SD	22.3	44.4	29.1	45.7	21.5	41.4	29.8	27.0														
T/R (Secs)	Mn	49.4	57.4	60.7	49.6	41.8	60.5	52.8	47.0														
	Mdn	42.8	47.4	48.3	38.4	34.7	44.8	43.8	39.2		14.70	.05											
	SD	31.6	47.7	40.0	34.5	29.3	50.3	39.6	32.0														
Total Time (Secs)	Mn	78.9	99.9	88.5	99.4	60.1	83.1	102.6	71.2														
	Mdn	65.5	72.6	75.1	76.3	47.7	69.8	72.6	54.8		22.07	.01											
	SD	66.8	90.3	67.9	82.4	42.7	52.8	121.4	59.8														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

*Expected frequencies less than 3

TABLE IX—*Frequencies of Scores on Card VII According to Stimulus Series, and Summary of Time Data*

Scoring Category	*Score*	Total Groups									*Chi-square*	p	Matched Groups									Chi-square	p
		C (PC)	C (S)	A	CS	S	W	CF	F	Total			C (PC)	C (S)	A	CS	S	W	CF	F	Total		
R	0	9	7	7	4	13	4	11	15	70	9.78	.20	7	6	4	3	8	4	6	9	47	2.50	.90
	1	45	33	36	40	44	49	32	28	307			24	23	22	24	21	26	20	21	181		
	2	14	24	18	17	14	18	20	19	144			8	10	10	12	10	8	13	5	76		
	3 or >	13	17	20	20	10	10	18	19	127			4	4	7	4	4	5	4	8	40		
W	0	35	37	30	47	41	29	30	32	281	13.91	.05	17	16	21	27	20	15	15	16	147	11.34	.10
	1	38	32	37	31	34	42	30	26	270			24	22	16	15	18	22	21	16	154		
	2	6	10	11	1	6	9	17	18	78			2	5	6	1	5	6	6	9	40		
	3 or >	2	2	3	2	0	1	4	5	19			0	0	0	0	0	0	1	2	3		
D	0	48	36	43	23	44	43	45	46	328	18.97	.01	30	28	24	15	27	26	29	30	209	16.46	.02
	1	13	22	18	33	24	25	18	22	175			4	9	9	19	11	12	6	11	81		
	2	12	17	13	11	8	8	12	10	91			7	6	8	5	2	4	7	2	41		
	3 or >	8	6	7	14	5	5	6	3	54			2	0	2	4	3	1	1	0	13		
Dd	0	79	71	75	71	77	76	76	75	600	3.96	.70	43	40	41	41	42	40	43	43	333	. . .*	
	1	1	8	2	5	1	4	3	6	30			0	3	0	2	0	2	0	0	7		
	2 or >	1	2	4	5	3	1	2	0	18			0	0	2	0	1	1	0	0	4		
S	0	75	72	74	71	75	71	69	73	580	3.62	.80	40	40	43	40	40	39	38	42	322	. . .*	
	1	5	9	6	9	5	8	10	8	60			3	3	0	3	2	2	5	1	19		
	2 or >	1	0	1	1	1	2	2	0	8			0	0	0	0	1	2	0	0	3		
M+FM+m	0	54	41	56	51	48	48	50	57	405	5.43	.50	34	27	32	32	26	25	30	30	236	5.13	.70
	1	22	33	20	26	31	31	24	19	206			8	14	10	11	15	17	12	10	97		
	2 or >	5	7	5	4	2	2	7	5	37			1	2	1	0	2	1	1	3	11		
T/1R (Secs)	Mn	25.8	31.9	29.2	24.5	27.8	30.5	24.8	23.7		13.03	.05											
	Mdn	20.1	24.2	21.1	14.8	16.2	21.8	17.6	15.5														
	SD	21.9	28.8	24.4	33.6	34.1	36.6	21.8	22.6														
T/R (Secs)	Mn	52.4	53.3	53.9	53.8	54.5	62.4	50.9	44.3		10.88	.10											
	Mdn	45.0	45.5	47.5	42.6	39.6	46.6	43.0	33.6														
	SD	33.8	34.3	32.6	40.3	51.2	50.4	32.2	33.5														
Total Time (Secs)	Mn	79.1	94.9	97.4	91.2	68.0	83.8	96.7	73.0		13.51	.05											
	Mdn	62.4	72.7	77.7	64.4	53.4	68.0	69.7	63.1														
	SD	68.2	77.1	87.0	72.1	51.7	56.9	101.5	54.5														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

*Expected frequencies less than 3

TABLE X—Frequencies of Scores on Card VIII According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	0	2	0	0	2	1	5	5	15	9.12	.20	0	2	0	0	2	1	3	2	10	6.45	.50
	1	25	23	36	24	28	21	28	21	206			13	16	21	18	15	14	21	16	134		
	2	31	25	25	26	30	34	18	23	212			19	13	14	14	16	16	10	12	114		
	3 of >	25	31	20	31	21	25	30	32	215			11	12	8	11	10	12	9	13	86		
W	0	48	48	44	51	53	53	37	37	371	14.92	.05	29	27	24	27	27	32	19	18	203	15.37	.02
	1	28	28	35	24	24	26	30	31	226			13	15	19	13	13	10	18	18	119		
	2	3	3	2	4	3	2	9	10	36			0	1	0	3	3	1	5	7	20		
	3 or >	2	2	0	2	1	0	5	3	15			1	0	0	0	0	0	1	0	2		
D	0	16	14	25	13	13	10	28	20	139	15.63	.02	7	11	12	11	8	5	21	12	87	16.78	.02
	1	23	21	26	26	30	25	23	29	203			13	11	17	13	18	16	12	20	120		
	2	22	27	16	25	25	31	17	20	183			15	12	8	14	11	16	7	9	92		
	3 or >	20	19	14	17	13	15	13	12	123			8	9	6	5	6	6	3	2	45		
Dd	0	70	74	69	57	71	71	65	69	546	16.90	.01	40	42	39	34	36	38	40	38	307	10.16	.20
	1	7	3	10	16	7	8	10	6	67			3	1	3	8	6	5	2	4	32		
	2 or >	4	4	2	8	3	2	6	6	35			0	0	1	1	1	0	1	1	5		
S	0	66	68	66	57	56	44	52	49	458	32.14	.001	39	39	38	35	31	22	36	30	270	32.98	.001
	1	13	10	13	22	24	36	23	25	166			4	4	4	8	11	21	7	12	71		
	2 or >	2	3	2	2	1	1	6	7	24			0	0	1	0	1	0	0	1	3		
M+FM+m	0	54	48	52	45	57	53	60	59	428	9.46	.20	29	27	29	23	29	34	37	31	239	13.70	.05
	1	24	33	29	31	21	25	17	20	200			14	16	14	19	12	9	6	12	102		
	2 or >	3	0	0	5	3	3	4	2	20			0	0	0	1	2	0	0	0	3		
T/1R (Secs)	Mn	22.4	24.0	21.6	21.2	17.7	22.9	25.4	21.8		21.14	.01											
	Mdn	15.4	16.8	12.5	11.2	12.3	13.7	24.1	12.8														
	SD	25.9	25.6	25.6	31.8	17.0	29.2	18.7	23.8														
T/R (Secs)	Mn	40.3	45.8	50.8	45.8	36.9	44.9	47.0	38.0		22.30	.01											
	Mdn	33.8	38.9	45.5	33.2	29.0	30.1	40.5	27.8														
	SD	31.7	26.3	30.4	40.2	25.5	41.0	33.2	30.4														
Total Time (Secs)	Mn	85.6	105.6	94.9	110.5	72.0	86.8	103.3	89.5		5.01	.70											
	Mdn	68.6	85.5	74.9	71.3	56.2	70.5	70.5	69.2														
	SD	69.6	81.2	78.3	151.1	55.5	61.6	109.1	85.6														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

TABLE XI—Frequencies of Scores on Card IX According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	*Score*	*C (PC)*	*C (S)*	A	CS	S	W	CF	F	Total	*Chi-square*	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	13	10	9	12	15	8	14	16	97	8.89	.20	10	6	4	9	9	6	10	9	63	3.46	.80
	1	33	28	32	21	36	38	30	27	245			17	20	20	18	18	18	18	22	151		
	2	17	18	17	18	15	18	15	22	140			10	11	11	6	7	11	9	8	73		
	3 or >	18	25	23	30	15	17	22	16	166			6	6	8	10	9	8	6	4	57		
W	0	49	45	56	70	44	41	49	41	395	33.71	.001	29	19	33	36	20	20	25	20	202	25.09	.001
	1	26	31	23	7	29	31	28	31	206			13	22	10	6	17	16	16	19	119		
	2	4	4	2	3	6	7	3	7	36			1	2	0	1	5	5	2	3	19		
	3 or >	2	1	0	1	2	2	1	2	11			0	0	0	0	1	2	0	1	4		
D	0	36	34	26	21	45	35	38	46	281	25.48	.001	21	22	12	17	27	19	26	30	174	22.24	.01
	1	17	16	31	21	23	36	18	19	181			10	11	23	14	10	21	10	11	110		
	2	16	15	14	21	8	5	9	10	98			9	7	5	8	2	2	3	2	38		
	3 or >	12	16	10	18	5	5	16	6	88			3	3	3	4	4	1	4	0	22		
Dd	0	72	69	56	61	64	64	60	59	505	13.80	.05	41	41	31	35	37	35	36	37	293	13.95	.05
	1	4	7	20	10	13	11	14	12	91			2	1	9	4	3	6	5	4	34		
	2 or >	5	5	5	10	4	6	7	10	52			0	1	3	4	3	2	2	2	17		
S	0	56	61	68	72	68	63	55	53	496	22.53	.001	34	37	38	41	35	33	36	33	287	8.14	.30
	1	22	17	10	7	13	10	19	18	116			8	6	5	2	8	6	6	7	48		
	2 or >	3	3	3	2	0	8	7	10	36			1	0	0	0	0	4	1	3	9		
M+FM+m	0	66	56	67	48	59	65	61	69	491	19.36	.01	38	36	37	29	30	37	32	38	277	13.91	.05
	1	13	18	10	26	21	12	15	10	125			4	6	6	14	12	5	10	5	62		
	2 or >	2	7	4	7	1	4	5	2	32			1	1	0	0	1	1	1	0	5		
T/1R (Secs)	Mn	28.3	34.8	35.7	30.1	34.3	38.8	32.5	30.4		15.00	.05											
	Mdn	23.5	23.0	27.5	14.8	20.5	31.0	20.8	20.8														
	SD	20.5	34.3	29.4	43.4	36.0	31.6	32.3	26.9														
T/R (Secs)	Mn	50.9	58.6	60.2	48.0	53.2	59.9	58.9	48.3		4.80	.70											
	Mdn	41.8	46.3	53.0	40.1	46.1	45.9	45.5	38.4														
	SD	29.8	42.7	36.0	35.7	37.4	45.1	47.5	31.8														
Total Time (Secs)	Mn	93.9	108.0	107.3	113.2	75.2	99.1	110.0	91.5		12.90	.05											
	Mdn	75.5	85.5	87.5	74.9	57.2	74.0	84.4	71.0														
	SD	96.0	90.0	81.5	147.7	58.9	85.1	112.3	83.4														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

TABLE XII—Frequencies of Scores on Card X According to Stimulus Series, and Summary of Time Data

		Total Groups											Matched Groups										
Scoring Category	Score	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p	C (PC)	C (S)	A	CS	S	W	CF	F	Total	Chi-square	p
R	0	8	2	10	9	11	3	8	6	57	15.26	.02	7	2	8	8	8	3	6	4	46	6.60	.50
	1	13	16	19	9	14	20	13	20	124			6	14	11	7	7	13	8	16	82		
	2	12	22	19	8	19	17	13	10	120			6	14	10	3	10	11	10	4	68		
	3 or >	48	41	33	55	37	41	47	45	347			24	13	14	25	18	16	19	19	148		
W	0	52	57	57	58	56	58	60	51	449	3.15	.80	30	29	31	32	27	31	35	24	239	8.38	.30
	1	27	20	21	19	23	22	16	24	172			11	12	10	10	15	12	7	16	93		
	2	2	3	3	3	1	1	3	2	18			2	2	2	1	0	0	1	1	9		
	3 or >	0	1	0	1	1	0	2	4	9			0	0	0	0	1	0	0	2	3		
D	0	16	12	23	16	21	19	12	23	142	19.03	.01	10	11	17	12	13	13	8	17	101	8.73	.20
	1	12	15	15	6	16	9	14	13	100			5	10	8	4	9	6	10	9	61		
	2	10	16	15	10	15	20	20	16	122			8	10	6	5	9	9	12	6	65		
	3 or >	43	38	28	49	29	33	35	29	284			20	12	12	22	12	15	13	11	117		
Dd	0	75	79	71	66	67	57	51	44	510	74.94	.001	41	42	39	37	36	34	31	30	290	23.72	.001
	1	3	2	7	9	9	17	17	24	88			2	1	3	4	5	6	9	12	42		
	2 or >	3	0	3	6	5	7	13	13	50			0	0	1	2	2	3	3	1	12		
S	0	79	79	78	68	71	58	54	46	533	94.34	.001	41	42	41	38	38	32	32	32	296	25.85	.001
	1	2	2	3	6	8	19	18	23	81			2	1	2	3	4	8	10	9	39		
	2 or >	0	0	0	7	2	4	9	12	34			0	0	0	2	1	3	1	2	9		
M+FM+m	0	52	48	66	53	67	63	58	67	474	24.61	.001	31	32	38	29	36	34	35	39	274	11.91	.10
	1	15	13	10	16	10	15	13	10	102			6	5	4	11	4	7	8	4	49		
	2 or >	14	20	5	12	4	3	10	4	72			6	6	1	3	3	2	0	0	21		
T/1R (Secs)	Mn	25.7	26.9	38.4	29.8	26.6	42.7	25.9	28.7		11.03	.10											
	Mdn	20.5	14.5	27.5	14.2	18.8	24.2	19.4	20.8														
	SD	21.6	38.6	36.9	53.8	39.5	74.5	22.4	29.5														
T/R (Secs)	Mn	37.3	41.5	56.5	36.9	37.9	58.5	39.9	46.0		15.12	.02											
	Mdn	33.4	34.3	44.4	26.4	34.1	32.8	33.7	37.4														
	SD	21.9	32.1	42.5	31.9	24.7	91.6	30.6	35.3														
Total Time (Secs)	Mn	131.2	136.7	124.6	137.9	95.2	129.3	139.1	124.3		7.32	.30											
	Mdn	95.5	86.1	101.4	89.2	68.4	91.8	97.5	105.0														
	SD	135.0	133.4	111.8	190.2	81.8	124.5	135.0	106.1														
TOTAL	N	81	81	81	81	81	81	81	81	648			43	43	43	43	43	43	43	43	344		

in order to see how figure-ground reversals are affected by structural alterations within that card; by comparing the data from the several tables one can also see how basic form affects the pull for this kind of response. The other aspects of response can be examined in a similar fashion, thus making it possible to determine the pull of each card for various types of responses and the dependence of these responses upon structural properties of the blot. The discussion here, however, will be limited to the within card analysis and will be presented in summary form.

CARD I

R: Productivity was not affected by blot structure. Rejections occurred infrequently; only 16 of 648 *Ss* failed to give at least one response.

W, D, Dd: The location of responses was affected by blot structure, but not in a well defined manner. Most evident is the lower frequency of D responses on the line figures (CF, F). Also of interest is the fact that nine *Ss* gave three or more D responses to series S, but no *S* in group W gave as many as three D responses. Breaking down a white figure appeared to be more difficult than differentiation of a grey figure.

S: Space responses were also dependent upon blot structure with the line figures (CF, F) producing the greatest number of this type of response. The solid grey figure (S) least often led to figure-ground reversals.

M+FM+m: Projection of movement varied significantly as a function of structure. Again groups CF and F were most deviant, only two *Ss* out of 162 giving movement responses.

Time: Time properties of behavior did not vary significantly as a function of blot structure.

Summary: Significant variations in location and movement scores were due primarily to the inclusion of figures CF and F. Shading on card I did not affect the formal aspects of response, as can be determined by inspection of the data for the C, A, CS, and S stimuli[7].

CARD II

R: Blot structure affected productivity. Rejections were most frequent when the figure contained color or was constructed of lines. High productivity was most likely to occur when clearly delineated D areas were present, without color (i.e., CS and CF). CF was especially interesting in that, compared to the other stimuli, it tended to lead to either rejection or a high frequency of response.

W, D, Dd: The location of responses was extremely dependent upon blot structure. Color breaks up this blot so that whole responses were infrequently given to the C series compared to all of the other modifications. S, W, A, and F produced a high number of W responses while CS and CF were intermediate. The normal expectation on this card would be at least one whole response, if it were not for the fact that certain blot areas are colored. The fact that whole responses are much less frequent on CS than A, however, suggests that it is not color per se which is important but rather the fact that color is the method by which the standard blot is broken up into definite areas with well articulated forms.

S: Space responses were related to structure on card II, being especially frequent on F, W, and CF.

M+FM+m: Movement responses occurred most frequently when the figure was a relatively uniform whole (S, W) and least frequently when the figure had well articulated parts (CS,

---

[7] It is important to remember that the C and A stimuli are identical for cards I, IV, V, VI, and VII. Also, in considering the data in all tables, the reader should recognize that $C_{(S)}$ and $C_{(PC)}$ refer to identical test experiences for their *Ss* on *all* cards; only the inquiry differed for these two groups and thus did not affect the scores analyzed in this paper. In discussing the data reference will be made frequently to the C series, meaning $C_{(S)}$ and $C_{(PC)}$ combined.

CF, C). Content analysis in the next section will clarify this finding.

Time: Neither the latency of response nor the time per response varied significanty as a function of color, shading, or other blot properties. There was significant variation in the total time devoted to the blot, however. *S*s in groups S returned the card more quickly than *S*s in any other group; they also were satisfied with a single response to the blot more frequently than other Ss (53 Ss in group S gave but one response). Content analysis, location scores, and other data indicate that most *S*s in this group saw the whole blot as two distinct humans; this perception tended to be immediate and it was so demanding that most *S*s could or would not go ahead to consider other possible additional responses.

Summary: The data for card II are especially revealing in regard to how blot structure determines perception. The shape of the whole blot is very suggestive of a particular class of percepts, but the discontinuity between parts created by the juxtaposition of colored and achromatic areas makes it very difficult for most *S*s to achieve total integration. Instead they tend to interpret part areas of the blot, which in turn affects other components of the response pattern. *S*s who achieve the whole human response on the C series demonstrate an achievement in integration, overcoming color discontinuity, which most *S*s can achieve only through the assistance of stimulus modification.

CARD III

R: Significant effects on productivity on card III due to blot structure were not demonstrated.

W, D, Dd: Location scores were relatively consistent from series to series, except for a tendency toward a greater number of whole responses on those series which are uniformly grey or white (S, W, F).

S: No significant variation was demonstrated.

M+FM+m: Marked variation in frequency of movement responses occurred from series to series. CF was most likely to elicit at least one movement response while W was most likely to elicit no movement response.

Time: Time scores were not affected by blot structure, except for latency. T/1R tended to be longer when the figures were constructed of variable greys (A).

Summary: The effects of blot structure upon the formal properties of response were much less pronounced for card III than for card II; the variations noted were fewer and less extreme. Careful examination of Table V impresses one with the consistency of scores from series to series. The red areas on card II actually overlap with achromatic areas whereas on card III they are separated by a considerable amount of white space. This is a blot with "scattered" but well defined form areas, consequently response tends to be largely form directed.

CARD IV

R: Frequency of response was not affected by structure; rejections did not occur more often due to shading.

W, D, Dd: The simple form series (F) tended to elicit the highest number of whole responses whereas CF and CS, with their accentuation of the center D area, provoked a relative increase in the number of detail responses. The frequency of Dd responses was not affected by structure.

S: Space responses were quite uncommon on any of the series. It is interesting, however, that the space response was most likely to occur on series W.

M+FM+m: The frequency of movement responses on card IV was quite dependent on structure; they were most common on the uniformly white or grey figures (S, W, F). Again, to anticipate the content analysis, it is on these three series that a whole human is most frequently seen, usually in motion. The shading and internal form structure on series A, CS, and CF makes this integrated perception more difficult to achieve.

Time: Time patterns on card IV also tended to be affected by structure. Series S and F secured the quickest reaction times, the shortest average times per response and the lowest total times.

Summary: Variation due to structure appears to be of about the same order as that demonstrated on card III, although not identical in type. Shifts in location can be effected by accentuating internal detail areas or by eliminating them. When eliminated, integrated whole responses involving movement become more frequent. It is as if the diffuse shading in the standard card draws attention inward, making response to the general outline more difficult. Shading plays a role here comparable to that of color on card II, although the effect is not as pronounced. *Ss* are also able to deal more quickly with the simple form (S, F), except when it is white on black (W).

CARD V

R: Significant variation in productivity was obtained due to structure. CS tended to elicit high productivity most frequently, while rejections were most common on F, S, and CF. Again it is interesting to note that CF, while relatively high in rejections, was also high in the number of records with three or more responses.

W, D, Dd: The large majority of *Ss* in all groups gave at least one whole response to card V; structure had no significant effect. D and Dd responses did vary significantly between groups, however, with the CS series evoking the greatest number in each category. When productivity is controlled, between group variation is not significant.

S: Space responses on card V were quite rare, and frequently was not affected by the stimulus modifications.

M+FM+m: As on the previous four cards, movement scores varied significantly as a function of blot structure. Controlling for productivity, however, reduced the significance level from .001 to .20. For the total groups, movement was more frequent when the stimulus was shaded, i.e., series C and A.

Time: Time per response varied with blot structure, but the other two time measures did not show significant effects. There was a tendency for responses to take longer when the card was shaded (C, A) than when shading was elminated (CS, S).

Summary: The form quality of the total blot is so well defined that internal modifications do not significantly alter the tendency to give whole responses. Accentuation of part areas can, nevertheless, alter the frequency of detail responses even though they remain relatively infrequent. The significant variation in movement scores suggests that structure does affect content, since movement and content are intertwined. In addition shading tends to slow down the rate at which responses are formed.

CARD VI

R: The number of responses was not significantly affected by structure. The frequency of rejections was relatively high on all of the series.

W, D, Dd: Location scores were related to structure. The uniformly white series (W, F) tended to elicit more whole responses and fewer detail responses than the other series. CF led to an emphasis upon details and was difficult for most *Ss* to interpret as a whole.

S: Space response were extremely rare on card VI, being given by only 6 of 648 *Ss*.

M+FM+m: Significant differences between groups in movement scores were demonstrated by the total group analysis, but not by the matched group analysis. The trend was for movement to be projected more often on CF than on the other series.

Time: Initial response time was not significantly different across groups. The groups did differ, however, in the amount of time taken per response and in total time. Responses were formed most quickly when the card was uniformly grey (S); also *S*s in this group spent less time working on the card.

Summary: Card VI was not easy for most *S*s, as shown by a total of 75 rejections. Shading per se, however, does not appear to be the critical factor. The massive, rather amorphous blot which suggests little activity and which does not lend itself to figure-ground reversals presents a difficult interpretive challenge. Although certain changes in response pattern can be effected by internal alterations of blot structure, the data indicate that card VI remains difficult because of its basic form.

CARD VII

R: The rejection rate for card VII was high, but the data indicate that shading is not responsible for this. Variation in productivity was not significantly affected by structure.

W, D, Dd: Location of responses was related to blot structure, however. Comparison of the CS and S distributions with those for C and A suggests that shading may facilitate the whole response on card VII. Detail responses were most frequent on CS.

S: The center white area on this card is often pointed to when one wishes to illustrate figure-ground reversal. The data for groups C and A indicate that such a response is given by almost ten per cent of the *S*s. In contrast to other cards, however, the frequency of this space response is not affected by blot structure.

M+FM+m: Movement scores were rather frequent on card VII, but this frequency was not affected by structure.

Time: Initial reaction time tended to be long when this blot was either shaded or when it was presented as a white figure on a grey background. Time per response did not show significant variation between groups, but *S*s spent less time responding to S blots than to the other series.

Summary: The data support the interpretation that shading tends to increase response time as well as the number of whole responses on card VII. Of perhaps equal interest is the fact that structural properties, other than basic form, are not related to frequency with which figure-ground reversals occur.

CARD VIII

R: Rejections of card VIII were infrequent; two-thirds of those which did occur were in response to the line figures (CF, F). Certainly the data do not support an inference that color leads to an inability to respond. Nor do the data indicate that overall productivity on this card is affected by structure.

W, D, Dd: Again location was not immune to structure effects. The line figures (CF, F) stimulated more whole responses, but color, in the direct sense, did not alter the frequency of the whole response. There is a suggestion, however, that the colored blot (C) evoked more detail responses than did the shaded blot (A). CF and F were also relatively low on detail responses. There was significant variation in minor detail responses, although the matched group analysis suggests that this may be a function of productivity level.

S: Space responses were comparatively common on card VIII; it is also clear that their frequency was significantly related to structure. Colored and shaded cards (C, A) had the lowest pulling power for this kind of response whereas the white figure (W) had the highest pulling power.

M+FM+m: The matched group analysis showed significant differences in movement responses although the total group analysis did not. The pattern of scores on both analyses is difficult to interpret.

Time: Initial response time varied significantly between groups. *S*s were particularly slow to respond to the intricate detail presented by the CF card. The data also suggest that color lengthened reaction time. Time per response was high on CF and A. Total time did not vary significantly as a function of structure.

Summary: Most facets of response to card VIII are affected by structure except productivity and time spent on the card. Effects upon movement, if any, are also minimal.

CARD IX

R: Rejections of card IX were very frequent, totalling about 15 per cent of all *Ss*. These rejections were evenly distributed over the eight groups, thus making it clear that basic form rather than color or shading is the primary factor involved. Overall productivity level was not significantly related to structure.

W, D, Dd: Marked differences in the location of responses were demonstrated. Color appeared to facilitate whole responses as evidenced by the finding of more such responses on the C series than on A and CS. *Ss* less frequently broke down the S and F blots into detail responses. Minor details were least frequently given by the C groups.

S: Space responses were frequent on card IX, being given by almost one out of four *Ss*. The total group analysis showed that this type of response was related to structure. The line figures (CF, F) pulled more space responses than did the other stimuli, but they were followed closely by the colored blot. The achromatic (A) and silhouette (CS, S) blots were less provocative in this regard while W was intermediate. These differences are washed out, however, when the groups are matched on R.

M+FM+m: Significant differences in movement were obtained, *Ss* in the CS group being most likely to give at least one such response.

Time: Two of the three time measures varied significantly. Initial response time was relatively fast on CS, relatively slow on W. *Ss* also devoted the least amount of time to the S blot.

Summary: The pattern of structural effects was similar to that identified on earlier cards. Perhaps of most interest is the fact that the high rate of rejections found on this blot is independent of structural attributes other than form.

CARD X

R: There was significant variation in productivity on card X due to structure. Group A was relatively low on R whereas group CS was relatively high.

W: Whole responses on card X were infrequent, and it is interesting that the several structural modifications had no significant effects upon the frequency of such responses. In contrast, D and Dd distributions were affected by structure. Three or more detail responses occurred most often on the CS and C series. Minor details, however, were rarely given on the C series but were quite frequent on the line series (CF, F) and the white series (W).

S: Space responses showed significant variation, being high on the white (W) and lined (CF, F) series and relatively low on the remaining series.

M+FM+m: Movement responses were more frequent on the C, CS, and CF blots than on the other stimuli.

Time: Variations in initial time and total time were not significant, but time per response was affected by structure. The latter was due largely to lengthened times on series A.

Summary: Productivity tended to be low on A and time to form responses was long. In addition the number of detail responses was less on A than on C. Integrating the findings suggests that color facilitates efficient and productive response to card X. When shaded, without color the blot is less easily broken down into discrete responses.

RESULTS III: CONTENT ANALYSIS

The final analysis was directed to the question of how blot structure influences the content of responses. Table XIII has been prepared in order to present a detailed summary of this analysis.

The content of each response was classified using Beck's (6) system. Specific categories within these generic classes were also noted in the initial tabulation. For example, "bird" was recorded as a separate category on card I as well as being included in the total number of animal responses. If five *S*s in any one of the eight groups gave a specific response (such as bat, witches, bow tie) to a specific blot area, then that response is listed separately under the generic term in Table XIII. Specific responses not given by at least five *S*s in one series are not listed separately but do contribute to the total number of responses in the general class. Also it should be noted that only those general classes are retained in the table which were used by five or more *S*s in at least one group.

In addition the following points should be made with regard to Table XIII:

1. If a general or specific content category is not listed this means that fewer than five *S*s gave such a response in each of the eight groups.

2. If no specific categories are listed under a general content heading this means that responses were sufficiently variable so that no specific content was given by as many as five *S*s in any one group.

3. Responses are listed with reference to the area of the blot used, whole (W), major detail (D), or minor detail (Dd). All of Beck's D areas are listed in the table, but only those Dd areas are listed which were responded to by at least five *S*s in any one group.

4. For each location area figures are listed opposite TOTAL. These entries indicate the number of responses given to the area by all *S*s in that group. For example, there were 99 whole responses given by *S*s in group A on card I. Total figures include those responses given too infrequently to earn separate listing in the table.

5. Some areas (e.g., D1 on card I) have only TOTAL entries. This means that no content category was used sufficiently frequently (i.e., by five *S*s) to merit separate listing. The numbers then simply indicate the frequency with which that area was interpreted on the various series.

6. For some responses a specific content is placed in parentheses following the more general class (e.g., geography, map on card I). This indicates that all responses of the general class were in fact limited to the specific content thus indicated.

7. At the end of the data for each card there is a listing opposite TOTAL R. These entries indicate the total number of responses given to the card by each group. They include responses given too infrequently to be listed separately in the table.

8. The reader, in using Table XIII, should also hold in mind that cards I, IV, V, VI, and VII are identical for groups $C_{(PC)}$, $C_{(S)}$, and A.

A final point needs to be made with regard to the construction of Table XIII compared to Tables II-XII. The latter tables contain data based upon scores as ordinarily assigned on the Rorschach. For example the response to card I, "Two persons (D2) pulling on another person (D4)" would be scored as a single whole response. For the content tabulation, however, such a response would be listed in Table XIII as a whole response, but the humans would also be given separate listings under D2 and D4 in order to show that these areas were given separate articulation by *S*.

Table XIII is intended to be used as a reference; the frequency distributions may be referred to as a source of information regarding the stimulus correlates of particular responses that are of interest. They also assist in defining the relative frequency of individual responses as well as the frequency with which various blot areas are utilized. No attempt will be made here to interpret all of the information in this table, but a few points regarding each card will be listed in summary form according to the area of the

TABLE XIII—Frequency of Content According to Card Area and Stimulus Series

Beck Area	Content	Card I							
		C (PC)	C (S)	A	CS	S	W	CF	F
W	Anatomy	3	11	7	1	1	0	2	1
	Animal	64	74	60	49	44	33	33	41
	Bat	38	39	27	20	23	15	6	11
	Bird	1	4	7	5	3	2	0	3
	Butterfly	18	17	10	14	6	8	3	7
	Head	0	3	4	3	1	2	13	6
	Rug or Skin	1	2	2	1	0	3	8	2
	Art	2	3	6	3	7	3	4	3
	Emblem	1	3	2	0	6	1	0	1
	Geography (Map)	6	14	4	18	9	14	54	51
	Human	3	4	4	8	15	16	7	4
	Persons, 2 or 3	0	2	0	7	8	8	0	0
	Witches, 2	1	1	0	0	7	5	1	0
	Ink	6	5	5	3	1	1	0	2
	Landscape	2	5	2	1	0	6	4	5
	Body of Water	1	1	1	0	0	4	4	5
	Mask	3	1	5	5	3	3	16	7
	TOTAL	94	125	99	92	84	84	123	119
D1	TOTAL	3	3	5	4	4	2	2	4
D2	Animal	3	5	3	4	2	3	3	3
	Geography (Map)	1	2	1	8	0	0	5	2
	Human	4	4	1	22	28	27	3	2
	Person	2	2	0	8	5	13	0	0
	Witch	2	2	1	11	23	14	2	1
	TOTAL	10	14	13	37	30	30	11	7
D3	Human	7	5	8	0	0	0	0	0
	TOTAL	7	7	9	0	0	0	0	0
D4	Anatomy	0	1	6	4	0	1	0	1
	Animal	7	6	8	3	23	12	0	0
	Cat	2	0	0	0	12	4	0	0
	Dog	0	1	0	0	7	2	0	0
	Insect	4	4	5	2	0	1	0	0
	Household	0	0	0	5	0	0	0	1
	Human	10	12	8	9	5	11	1	0
	Person, 1	10	10	5	6	5	9	1	0
	Persons, 2	0	2	3	3	0	2	0	0
	TOTAL	17	19	24	22	28	24	1	2
D5	TOTAL	1	0	1	2	3	2	3	3
D6	Human (Head)	1	0	0	5	6	3	2	0
	TOTAL	1	0	0	5	6	3	2	0
D7	Animal	3	1	1	1	7	2	7	6
	Head	2	0	1	1	4	2	6	6
	TOTAL	4	3	1	5	7	3	8	9
D8	TOTAL	5	4	4	4	5	2	4	4
D9	TOTAL	1	2	1	1	1	0	0	1
Dd23	Geography (Islands)	2	3	1	4	4	19	15	2
	TOTAL	2	3	2	4	5	22	15	3
Dd24	Music (Bell)	0	0	0	9	0	0	0	0
	TOTAL	2	0	1	13	0	0	0	0
Dds26	Geography (Islands or Lakes)	2	6	2	6	3	5	11	28
	TOTAL	2	7	3	6	3	5	12	28
Dd31	Animal (Head)	0	0	0	0	5	1	0	2
	TOTAL	0	0	0	1	7	3	1	3
Upper ½ of D4	Anatomy	5	2	2	0	0	0	1	0
	TOTAL	7	4	6	2	1	3	1	1
Top ½ of W	Animal (Winged)	5	3	0	1	1	2	0	0
	TOTAL	6	3	0	1	1	2	0	0
Lower ½ of D2	Geography	2	0	1	1	1	4	3	5
	TOTAL	3	2	2	1	2	5	4	5
	TOTAL R	176	202	184	216	200	198	214	198

Beck Area	Content	Card II							
		C (PC)	C (S)	A	CS	S	W	CF	F
W	Anatomy	2	6	5	3	2	1	5	4
	Animal	8	15	26	16	14	14	35	12
	Bears, 2	3	3	6	2	1	0	2	0
	Butterfly	2	4	0	0	2	4	11	2
	Chickens, 2	1	1	7	1	1	1	3	2
	Crab	0	1	0	1	0	1	11	0
	Art	3	3	0	1	1	1	6	3
	Geography	2	1	0	2	0	0	8	8
	Human	9	3	36	28	67	62	23	47
	Persons, 2	8	3	35	25	66	56	23	42
	Face	0	0	0	0	1	4	0	5
	Mask	0	1	0	0	0	4	0	5
	TOTAL	31	36	70	53	87	86	82	85
D1	Animal	40	38	13	25	1	1	1	1
	Bears	13	8	7	0	0	1	0	0
	Dogs	9	11	3	10	0	0	0	0
	Heads	5	5	0	14	0	0	0	0
	of dog	0	0	0	10	0	0	0	0
	TOTAL	47	46	16	28	1	1	4	1
D2	Animal	6	10	8	4	2	3	16	3
	Heads (of birds)	0	0	5	0	0	0	1	1
	Winged	3	6	0	0	0	1	3	0
	Blood	4	9	0	0	0	0	0	0
	Human	4	1	3	21	0	3	5	3
	Feet	0	0	2	9	0	0	0	0
	Hands	1	0	0	11	0	0	0	0
	Heads	3	0	0	1	0	2	5	3
	TOTAL	23	32	13	27	3	7	24	8
D3	Animal	8	14	7	15	2	1	14	3
	Butterfly	5	12	1	10	2	0	10	1
	Blood	2	10	0	0	0	0	0	0
	Botany	0	0	0	5	0	0	0	0
	Fire	5	4	0	0	0	0	4	0
	TOTAL	20	32	10	21	3	2	21	3
D4	Architecture	1	0	2	9	1	1	3	0
	Botany (Tree)	0	0	0	0	1	5	0	2
	Implement	1	3	3	5	0	0	2	0
	TOTAL	9	6	6	21	3	9	9	4
Ds5	Animal	1	1	0	0	0	1	4	5
	Household (Lamp)	1	0	2	7	7	6	10	5
	Recreation (Top)	0	1	0	1	1	5	1	7
	TOTAL	7	10	5	11	10	18	28	25
D6	Anatomy	2	6	0	3	0	0	1	0
	TOTAL	9	15	4	5	1	0	3	1
D7	TOTAL	0	1	0	2	0	0	0	0
Dd25	Nature (Icicle or Stalagmite)	1	1	5	0	0	4	4	5
	TOTAL	4	1	7	0	3	8	6	8
Dds29	Botany (Tree)	0	0	0	0	0	5	0	1
	TOTAL	0	0	0	0	0	6	0	5
Dds30	TOTAL	0	0	2	2	1	10	1	4
D2 + D3	TOTAL	6	3	0	0	0	0	0	0
Dds in Dd24	TOTAL	0	0	0	5	1	3	0	7
Dd between D1 and D2	TOTAL	0	0	0	11	0	0	0	0
	TOTAL R	166	186	148	200	123	156	193	161

TABLE XIII — *(Continued)*

Card III

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Geography	0	1	0	2	0	0	4	11
	Human (D1 elaborated)	5	2	0	0	2	6	1	4
	TOTAL	8	13	7	3	11	15	9	19
D1 and D9	Animal	12	14	9	10	3	8	5	3
	Birds	4	4	4	0	1	5	0	1
	Dogs	3	3	3	6	0	0	0	0
	Human	54	48	48	55	49	42	68	46
	∧ Persons	50	46	47	52	48	40	67	46
	V Persons	4	2	1	3	1	2	1	0
	TOTAL	74	70	62	66	52	53	73	49
D2	Anatomy	10	2	6	1	0	5	2	5
	Stomach	7	2	3	1	0	0	1	3
	Animal	2	10	14	17	12	13	13	15
	Birds	0	3	3	4	4	12	6	7
	Monkeys	1	4	4	5	3	0	0	3
	Blood	2	5	0	0	0	0	0	0
	Botany	0	2	5	8	5	4	3	3
	Human	1	2	1	4	5	1	1	3
	TOTAL	20	24	29	36	27	26	28	32
D3	Anatomy	10	8	5	3	3	8	4	2
	Bony	2	7	1	2	3	6	1	1
	Visceral	8	1	4	1	0	2	3	1
	Animal	12	11	17	14	27	14	12	15
	Butterfly	11	10	15	12	27	13	10	12
	Clothing (Bow or tie)	9	12	11	23	5	2	5	2
	TOTAL	36	35	35	43	38	27	26	23
D4	Human (Head)	1	1	2	5	0	0	0	0
	TOTAL	4	6	7	14	1	0	3	0
D5	Botany (Tree Limb)	4	5	2	0	2	1	1	0
	Human (Arm or Leg)	5	3	0	2	0	1	7	0
	TOTAL	12	12	6	8	5	8	10	2
D6	Human (Head)	0	0	1	1	3	3	3	5
	TOTAL	2	4	2	5	4	4	6	8
D7	Anatomy	4	3	8	3	5	4	1	0
	TOTAL	6	6	11	9	14	16	2	9
D7 as part of D1	Fire	5	4	0	5	7	5	24	16
	Household (Pot-like)	9	10	5	10	20	16	3	5
	Music (Drums)	6	5	1	3	3	4	0	1
	TOTAL	23	23	10	20	30	25	27	22
D8	TOTAL	4	5	3	2	0	1	1	1
D9	(See D1 above)								
D10	Clothing (Shoe)	0	3	5	4	0	1	5	0
	TOTAL	2	3	7	6	0	2	6	0
D11 and D12	Animal	5	3	2	5	5	8	3	4
	TOTAL	5	3	5	9	7	9	5	9
D1 + D3	TOTAL	2	5	5	0	8	5	3	6
D4 + D11	TOTAL	0	2	0	2	0	0	7	0
Dd (Neck area of D1)	Clothing (Collar)	0	0	0	1	0	0	6	0
	TOTAL R*	194	201	191	215	179	177	202	171

*(Does not include D7 as part of D1)

CARD IV

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Anatomy	7	3	3	0	0	1	3	0
	Animal	40	44	37	29	17	19	29	33
	Ape-like	6	5	2	2	4	7	7	1
	Bat	2	6	4	2	0	0	5	13
	Skin	15	16	16	7	4	2	7	8
	of Bear	5	8	9	6	4	1	6	5
	Botany	3	10	3	9	6	9	12	10
	Plant	2	7	0	1	1	3	5	1
	Tree	1	3	3	8	5	6	7	9
	Geography (Map)	1	3	0	2	0	2	6	6
	Human	3	4	6	17	32	28	8	32
	TOTAL	62	72	55	63	60	69	69	89
D1	Animal	10	14	8	0	6	6	0	5
	Head	6	9	6	0	0	0	0	0
	TOTAL	11	18	13	3	9	9	0	6
D2	Animal	0	3	2	3	0	0	5	2
	Clothing (Shoes)	1	4	3	1	11	7	2	3
	Human (Feet)	3	2	2	4	4	5	0	1
	TOTAL	5	11	7	12	15	13	11	6
D3	Botany (Flower)	3	4	5	0	0	1	0	0
	TOTAL	5	8	7	2	1	1	0	1
D4	Animal	7	11	8	8	10	4	14	12
	Head (of Bird)	2	6	1	1	4	3	6	3
	< Head (of Bird — Including Dds 31)	0	0	2	0	0	1	7	6
	Snake	2	0	2	7	2	0	0	1
	TOTAL	12	14	13	10	11	8	16	12
D5	Anatomy (Spine)	1	10	4	1	0	0	0	0
	Animal	0	1	1	6	0	0	2	0
	Botany (Tree Trunk)	1	0	0	3	0	0	30	0
	Household	0	0	0	4	0	1	8	0
	Human	0	0	0	11	2	4	14	3
	Arm or Leg	0	0	0	0	0	0	9	0
	TOTAL	2	11	6	29	4	5	61	3
D6	Clothing (Boots)	5	1	9	0	9	3	0	1
	TOTAL	8	3	11	2	13	6	0	2
D7	TOTAL	1	1	2	4	0	0	1	0
D8	Animal	3	1	1	9	3	6	3	6
	Heads (of Dogs)	1	0	0	8	3	4	1	6
	TOTAL	4	2	3	10	5	6	5	9
Dds24	TOTAL	0	0	0	2	0	5	1	0
Lower part of D1	Animal (Head)	0	0	0	0	0	2	0	6
	TOTAL	1	0	0	1	0	3	1	6
W minus D1	Animal	5	1	1	1	0	2	1	3
	Human	0	1	1	4	5	6	1	3
	TOTAL	5	2	2	5	5	8	2	6
Lower ½ of W	Animal	2	1	1	0	3	2	0	6
	Winged	1	1	1	0	3	1	0	5
	TOTAL	2	1	1	0	3	2	0	6
	TOTAL R	136	165	132	160	147	146	190	164

TABLE XIII—*(Continued)*

Card V

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Animal	74	80	95	75	77	73	86	74
	Bat	16	28	36	25	20	13	21	25
	Bird	5	8	9	6	9	6	11	7
	Butterfly	35	31	38	37	37	36	36	25
	Insect	6	1	5	6	6	2	5	3
	Moth	5	6	1	1	1	7	4	1
	Geography	0	2	1	1	0	3	3	11
	Human	2	2	2	3	4	6	5	4
	D7 elaborated	1	2	2	3	3	4	5	2
	TOTAL	84	95	100	86	82	83	101	95
D1	Animal	3	0	2	0	3	3	7	2
	Leg	3	0	2	0	2	2	7	2
	Human (Leg)	1	3	4	8	0	2	0	0
	TOTAL	4	4	6	10	3	7	7	2
D2 and D8	Animal	2	0	0	4	6	0	6	2
	Ears	0	0	0	2	2	0	6	2
	Human	2	7	5	22	6	1	2	4
	Legs	1	5	4	22	5	1	2	4
	TOTAL	5	8	7	26	13	2	10	7
D3 and D9	Animal	3	4	5	3	5	3	6	7
	TOTAL	5	4	7	9	10	5	12	13
D4	Animal	1	1	0	2	1	5	2	6
	TOTAL	6	4	6	6	5	5	5	6
D5	TOTAL	1	3	3	1	2	0	0	0
D6	Animal	0	5	0	1	5	4	1	5
	Head (Rabbit)	0	2	0	0	2	3	0	5
	TOTAL	0	6	0	1	5	5	3	6
D7	Animal	9	5	9	0	6	15	4	11
	Rabbit	3	2	4	0	4	10	1	8
	Human	5	7	2	18	3	5	5	2
	TOTAL	14	12	12	19	9	20	11	13
D8	(See D2 above)								
D9	(See D3 above)								
D10	Animal	1	2	1	0	2	3	6	9
	Head (Alligator)	1	2	0	0	1	3	1	5
	TOTAL	2	6	1	0	2	4	7	9
D11	TOTAL	4	3	0	0	2	1	2	0
Dd23	Human (Face)	1	1	1	5	0	0	3	1
	TOTAL	1	1	1	5	1	0	3	1
Dd30	Human (Head)	1	0	0	13	0	0	2	0
	TOTAL	1	1	0	13	0	0	2	0
Cut-off W	Animal	9	4	8	16	0	5	10	1
	Bat	3	4	0	5	0	0	4	0
	Butterfly	4	0	3	11	0	3	3	0
	Human (D7 elaborated)	2	1	0	7	0	1	1	0
	TOTAL	11	7	8	25	0	8	11	1
	TOTAL R	144	160	156	206	141	152	177	160

Card VI

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Animal	27	26	32	27	35	29	16	36
	Cat	2	1	0	2	12	7	0	19
	Dog	1	0	0	0	1	6	0	2
	Skin	15	10	18	14	20	13	4	13
	of bear	5	5	0	7	9	6	1	3
	of cat	1	1	6	3	7	4	0	4
	Turtle	3	5	3	5	0	0	1	0
	Winged Animal	0	4	5	1	0	1	8	0
	Botany	4	3	0	6	5	9	3	4
	Flower	2	2	0	1	2	5	3	1
	Tree	2	1	0	5	3	4	0	3
	Human	0	2	1	2	5	9	3	6
	Landscape	4	2	2	0	1	6	1	0
	TOTAL	40	43	39	45	50	62	36	60
D1	Animal	14	20	17	7	5	8	6	4
	Skin	14	20	16	7	4	4	5	3
	of bear	7	6	10	2	2	3	2	2
	Human	1	2	2	1	1	0	8	7
	∧ Person(s)	0	1	0	1	0	0	7	2
	∨ Person(s)	1	1	2	0	1	0	1	5
	TOTAL	22	27	26	12	11	16	16	19
D2	Human	2	3	2	1	0	0	14	0
	TOTAL	8	8	5	12	0	0	15	1
D3	Animal	18	18	6	2	11	9	4	8
	Bird	5	2	0	0	0	0	2	0
	Head (of cat)	1	2	1	2	9	7	1	6
	Insect	6	6	2	0	1	0	1	0
	Botany	0	0	1	0	2	5	0	1
	Human	0	1	0	1	1	1	6	1
	TOTAL	21	20	9	3	15	18	19	14
D4	TOTAL	3	3	4	5	2	4	3	0
D5	Household	0	0	1	5	0	0	5	0
	Candles	0	0	1	0	0	0	5	0
	Post	0	0	0	5	0	0	0	0
	TOTAL	3	8	4	12	0	0	11	0
D6	TOTAL	4	2	4	7	0	1	4	3
D7	TOTAL	3	3	4	3	1	2	3	3
D8	Animal (Cat)	0	0	0	0	4	2	0	6
	TOTAL	3	6	1	7	11	12	4	12
D9	Animal	6	3	5	10	5	4	6	6
	Head (of dog)	4	3	3	8	4	2	2	5
	TOTAL	6	4	6	12	8	5	7	6
D10	TOTAL	1	1	0	0	0	1	0	0
D11	TOTAL	1	2	1	7	0	0	3	0
D12	Household (Clothespins)	0	0	0	2	0	0	6	0
	Human (Legs)	0	0	0	4	0	0	5	0
	TOTAL	1	2	2	14	0	0	18	0
Dd21	TOTAL	4	3	1	4	1	1	0	5
Dd26	Animal (whiskers)	2	2	4	12	2	1	1	2
	TOTAL	2	2	4	13	2	1	3	3
Dd31	TOTAL	1	2	2	1	0	0	5	0
W minus D6	TOTAL	4	5	2	4	0	1	4	0
W minus lateral part of D1	Anthropology (totem pole	0	1	0	0	0	0	6	0
	TOTAL	0	2	1	2	1	0	6	1
Lower part of D2	TOTAL	0	0	0	5	1	0	2	1
	TOTAL R	134	158	124	177	110	131	165	137

Card VII

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Animal	12	16	16	5	5	8	16	7
	Dogs	5	9	4	3	3	1	4	2
	Clothing	0	1	0	1	0	5	4	14
	Collar	0	1	0	1	0	2	3	11
	Clouds	9	9	12	0	2	2	0	0
	Geography (Map)	9	8	7	8	1	5	12	9
	Household	1	0	3	2	8	5	3	10
	Chair	0	0	3	2	5	4	3	10
	Human	18	6	7	14	24	30	28	24
	∧ Figures, 2	14	4	2	8	21	25	16	18
	∨ Girls, 2	4	2	5	6	3	5	12	6
	Landscape	0	2	6	4	0	0	4	1
	TOTAL	58	59	70	42	47	62	76	75

TABLE XIII — *(Continued)*

Card VII (Continued)

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
D1	Animal	10	8	3	4	1	4	3	0
	Heads	5	3	1	2	1	3	2	0
	Human	2	3	4	17	7	5	5	5
	Heads	2	3	4	17	5	4	5	4
	TOTAL	14	14	9	24	8	12	10	6
D2	Animal	12	13	12	6	6	4	13	14
	Dogs	7	8	4	3	5	2	5	9
	Human	8	10	11	21	21	16	8	10
	∧ Persons, 2	2	6	8	17	18	14	6	10
	V Persons, 2	6	4	3	4	3	2	2	0
	TOTAL	23	30	29	29	28	23	24	28
D3	TOTAL	3	2	8	9	0	2	1	3
D4	Animal	6	3	7	8	0	0	0	0
	Butterfly	5	2	7	6	0	0	0	0
	TOTAL	16	7	11	11	4	6	3	8
D5	TOTAL	4	2	3	3	1	3	4	3
D6	TOTAL	5	5	3	10	2	0	8	0
Ds7	TOTAL	2	4	2	4	4	8	6	4
D8	TOTAL	6	5	1	1	2	2	2	3
D9	TOTAL	1	0	2	0	0	0	1	0
D10	Animal	4	4	6	4	1	0	0	0
	TOTAL	4	4	6	5	1	0	0	0
D11	Animal (Head or Skull)	0	0	0	0	0	0	5	0
	TOTAL	2	3	0	3	0	0	10	0
Dd21	TOTAL	2	2	3	6	2	1	3	3
	TOTAL R	143	147	157	164	107	126	151	135

Card VIII

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Anatomy	8	5	1	7	5	6	7	8
	Animal	17	15	35	24	18	17	25	15
	Insect	0	0	0	0	0	1	8	0
	Sea	1	1	2	2	2	2	5	2
	D1 elaboration of two animals	16	14	32	22	16	13	12	12
	Art	2	6	3	2	2	2	2	3
	Botany	3	0	2	0	0	2	5	4
	Geography	0	1	0	3	1	0	8	5
	Human	0	0	0	3	3	1	5	4
	Landscape	3	3	0	0	0	0	4	6
	TOTAL	40	39	42	41	33	30	66	56
D1	Animal	74	73	77	76	63	68	44	48
	Bear	14	11	22	24	19	13	12	10
	Cat-like	5	4	10	18	11	20	14	10
	Dog-like	6	5	5	10	9	8	2	13
	Rat	9	7	17	6	6	5	0	1
	Rodent (various types)	21	21	12	4	6	6	2	3
	TOTAL	74	74	77	76	63	69	45	50
D2	Animal	4	7	0	2	0	4	0	0
	Butterfly	3	7	0	2	0	1	0	0
	Botany	5	9	0	1	2	0	2	3
	Flower	5	7	0	1	1	0	1	0
	Food	9	11	2	1	0	0	0	0
	IceCream	9	11	0	0	0	0	0	0
	Landscape	17	13	28	10	6	0	3	3
	TOTAL	32	44	30	16	11	5	5	8
D3	Anatomy	11	17	15	20	23	37	16	27
	Ribs	11	17	14	17	22	35	14	26
	TOTAL	13	19	19	24	24	39	20	28
D4	Animal	1	2	1	0	5	2	0	6
	Sea	0	1	1	0	5	1	0	2
	Botany	8	0	4	5	4	5	2	4
	Tree	3	0	4	5	4	5	2	4

Card VIII (Continued)

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
D4	Landscape (Mountain)	3	2	2	2	1	4	12	13
	TOTAL	13	4	8	8	10	11	16	24
D5	TOTAL	5	4	1	5	2	3	2	2
D6	Animal (Head)	1	1	0	2	5	1	0	0
	TOTAL	8	6	4	6	7	1	2	0
D7	TOTAL	7	9	5	13	0	0	3	0
D8	Botany (Tree)	2	1	2	2	6	5	6	10
	TOTAL	5	9	7	4	10	8	12	14
Dd24	TOTAL	0	0	0	5	1	4	1	3
Dd26	Animal (Head)	0	1	3	8	2	0	4	5
	TOTAL	3	3	4	13	4	3	6	6
Dds28	TOTAL	2	0	0	1	0	3	8	5
Dds32	TOTAL	0	1	0	0	0	0	0	5
W minus D1	Anatomy	4	5	10	15	9	6	3	0
	TOTAL	8	9	11	17	15	11	9	5
Dds lateral to D3	TOTAL	1	0	1	0	0	1	3	5
	TOTAL R	231	233	224	250	192	195	215	221

Card IX

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Animal	3	1	8	1	9	6	12	15
	Center face elaborated	0	0	5	0	3	1	1	11
	Sea insect	1	1	3	1	3	1	7	1
	Art	6	12	1	2	4	0	2	3
	Botany	5	1	1	2	4	3	1	0
	Fire (explosions)	2	7	2	0	1	1	1	1
	Geography	1	1	0	0	1	0	3	7
	Household (Vase)	1	3	0	1	2	5	1	1
	Humans	1	3	4	3	13	13	8	11
	V Person	0	0	0	0	3	2	1	5
	∧ 2 Persons	0	1	0	1	1	8	5	2
	Landscape	5	2	4	0	0	1	0	0
	Mask	0	1	0	0	4	3	1	5
	Nature	3	5	1	1	1	1	0	1
	TOTAL	41	47	26	14	47	46	32	48
D1	Animal	5	3	5	2	2	1	4	0
	Human	2	1	1	32	3	0	2	1
	> Person	2	1	1	9	3	0	2	1
	∧ Person	0	0	0	23	0	0	0	0
	TOTAL	15	6	11	37	5	1	7	2
D2	Animal (Deer-like head)	10	18	4	0	0	0	0	0
	TOTAL	14	19	5	0	0	0	1	0
D3	Animal	5	2	1	2	0	3	2	0
	Human	11	8	11	29	15	25	22	14
	Clown	0	1	0	4	1	4	1	2
	Elf-like	0	2	3	0	3	5	0	2
	Witch	8	3	5	13	3	0	12	2
	TOTAL	29	13	14	32	16	30	26	15
D4	Human (Head)	11	15	26	1	7	6	4	8
	TOTAL	13	16	27	2	9	7	4	9
D5	Household	0	1	0	11	2	2	2	0
	Candle	0	1	0	7	0	2	2	0
	TOTAL	5	5	2	23	3	2	9	1
D6	Animal (2 or more)	1	1	0	6	3	0	3	0
	Clouds	3	2	1	4	3	5	4	3
	Human (D4 elaborated)	3	6	5	0	2	2	1	1
	TOTAL	17	15	8	20	12	8	13	7

TABLE XIII — *(Continued)*

Card IX (Continued)

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
D7	Animal (Antlers)	2	1	0	1	0	1	0	5
	TOTAL	5	1	1	3	0	8	6	9
Ds8	Clothing	0	1	0	1	0	0	6	1
	Household (Vase)	5	1	1	3	0	0	0	0
	Human	0	0	1	0	0	3	1	8
	Music (Violin)	0	2	5	0	0	0	0	0
	Nature (Ice, Water)	6	1	0	0	0	0	0	0
	TOTAL	20	9	10	7	3	6	18	15
D9	Botany (Tree)	1	3	0	9	0	0	3	0
	Household (Candlestick)	0	1	0	5	0	1	0	0
	TOTAL	3	5	3	16	0	1	6	0
D10	TOTAL	1	3	1	0	0	0	0	0
D11	TOTAL	2	0	2	0	0	1	1	0
D12	Human (D3 elaborated)	2	0	5	1	3	2	1	2
	TOTAL	2	2	6	1	3	3	5	2
Dds22	TOTAL	5	2	3	0	1	2	2	0
Dds23	TOTAL	0	1	1	0	1	0	1	5
Dd25	TOTAL	2	5	3	4	3	1	3	6
W minus D6	TOTAL	1	7	7	0	5	1	7	2
Upper ⅓ of W	TOTAL	3	5	3	1	1	4	1	1
Dds lateral to Dd21	Animal (Rodent)	0	0	0	0	0	1	6	1
	TOTAL	1	0	2	1	0	4	6	4
Dds below Dd26	TOTAL	2	1	0	1	1	5	4	5
Dd at top of D3	TOTAL	1	0	4	4	2	3	3	5
	TOTAL R	203	181	167	198	137	152	171	157

Card X

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
W	Animal	7	5	7	10	11	6	12	5
	Animals (Group of)	5	1	4	6	1	6	5	3
	Butterfly	0	1	1	1	0	0	5	0
	Insects	2	3	2	3	7	0	0	0
	Art	8	9	2	8	2	3	1	5
	Botany	4	5	1	1	7	1	0	2
	Geography (Map)	0	2	4	2	1	4	8	12
	TOTAL	32	30	26	28	27	24	25	35
D1	Animal	33	32	29	39	34	26	14	15
	Crab	8	4	13	4	9	11	2	8
	Sea (Various types)	8	4	3	7	3	3	5	6
	Spider	15	24	13	25	16	7	2	0
	Geography (Lakes)	0	0	0	1	0	0	6	3
	Ink	5	6	3	2	0	3	2	1
	TOTAL	41	42	40	48	38	38	26	23
D2	Animal	18	20	16	28	26	29	19	11
	Dog	13	16	8	24	25	27	17	10
	TOTAL	21	25	20	29	27	30	21	13
D3	Animal (Wishbone)	8	9	12	9	2	7	21	17
	Botany (Seed-like)	8	6	2	2	2	0	0	0
	TOTAL	20	22	14	17	5	9	26	20

Card X (Continued)

Beck Area	Content	C (PC)	C (S)	A	CS	S	W	CF	F
D4	Animal	28	26	9	18	8	13	19	14
	Caterpillar or worm	19	21	3	5	1	2	1	0
	V Head (Turkey)	1	0	0	6	3	5	4	2
	V Sea Horse	5	4	3	1	3	4	12	11
	Human (Chaps, Legs)	0	1	0	2	2	8	10	11
	TOTAL	29	30	9	22	11	21	33	26
D5	Animal	23	25	7	2	0	1	3	0
	Head (Rabbit)	19	24	7	2	0	1	2	0
	TOTAL	25	25	7	2	0	1	3	0
D6	Animal	5	7	6	1	3	1	1	1
	TOTAL	7	11	8	5	4	2	2	3
D7	Animal	22	15	10	10	4	11	5	7
	Crawfish	5	2	5	2	1	3	0	1
	Deer	8	6	3	2	0	6	3	2
	TOTAL	24	16	11	10	4	11	5	7
D8	Animal	24	14	11	35	6	1	58	0
	Insects	9	10	3	3	2	0	0	0
	Rabbits	0	0	0	0	0	0	10	0
	Rats, Mice	1	0	0	8	0	0	6	0
	Sea	4	1	5	3	2	0	1	0
	TOTAL	26	16	12	37	7	1	60	0
D9	Animal	4	5	3	3	4	0	0	0
	Geography	2	1	1	5	0	5	7	1
	Human	10	7	3	26	3	11	4	7
	∧V Persons, 2	10	7	0	15	3	7	2	2
	∧ Person, 1 (with D8 as head)	0	0	2	11	0	4	1	2
	TOTAL	24	19	16	36	12	19	13	8
D10	Animal	3	5	5	3	5	3	3	1
	TOTAL	5	5	8	8	10	4	8	13
D11	Anatomy	5	2	1	0	1	2	0	0
	Animals, 2 (By D14)	10	4	1	10	1	0	10	0
	TOTAL	19	11	2	10	5	5	11	10
D12	Animal	8	8	10	14	6	7	16	8
	Cow	0	1	2	5	5	2	1	1
	Sheep	1	2	1	0	0	1	5	2
	TOTAL	9	8	11	15	6	8	17	8
D13	Animal	10	8	7	2	2	5	3	3
	> Dog	5	2	4	1	1	0	2	1
	Geography (Map)	1	0	2	1	0	2	7	5
	TOTAL	22	16	16	8	6	9	11	10
D14	Botany (Tree Trunk)	4	6	1	2	13	9	0	12
	TOTAL	6	9	2	7	16	15	4	19
D15	Botany (Flower)	7	2	0	0	0	0	0	0
	TOTAL	10	4	5	3	6	4	2	1
Dds29	Animal (Turtle)	0	0	0	0	0	0	2	9
	Human	0	0	0	2	3	13	2	2
	TOTAL	0	0	0	3	7	15	6	14
D7 + D15 Dds in D5	Animal	1	1	0	1	2	2	2	5
	Recreation (Horseshoes)	0	0	0	0	1	1	8	8
	TOTAL	0	0	0	1	1	1	13	13
D1 projections	Animal	1	1	3	0	4	3	5	1
	TOTAL	2	2	3	2	6	4	6	8
	TOTAL R	346	318	233	318	222	243	320	272

card involved. Many chi-square analyses were done on the data in this table, but space does not permit their inclusion. In the discussion that follows reference to the C group or the C blot is intended to mean that data from $C_{(PC)}$ and $C_{(S)}$ have been combined and are being treated as a single group.

CARD I

W

1. Anatomical responses were infrequent unless the blot was shaded (C, A).

2. Shading increased the number of animal responses. Bats were most frequent when the stimulus was shaded, least frequent when the figure was white. Butterfly was less frequent for each series than the bat. Animal rug or skin was relatively frequent on the CF blot, despite the absence of shading.

3. The line figures (CF, F) had a tremendous pull for the map response. (This vague, undifferentiated response often seemed to reflect the poverty in associations that overcame *Ss* as they looked at these stimuli.)

4. Human percepts, involving the whole blot, were most common when the figure was either a uniform grey or white on the contrasting background (i.e., S, W). Witches were also most frequent on S and W.

5. Shading was conducive to the ink response, but it also occurred on the other series although less frequently.

6. CF had a strong pull for the mask percept.

7. There were fewer whole responses when the figure was a solid grey or white (S, W).

D1

1. This area was not interpreted very often on any of the series. To denote it D1, as Beck does, is inconsistent with these data.

D2

1. It is very striking how often a human interpretation was given to D2 when shading was eliminated and the area was made into a solid grey or white (CS, S, W). Witches were most common on the S series, but they were also rather frequent on W and CS.

2. When this area was made a solid grey or white and at the same time contrasted with its background, *Ss* interpreted it more frequently (CS, S, W).

D3

1. The D3 form is present on CS and CF but *Ss* did not interpret the area as a separate response. The shading nuances thus appear to be quite important in determining the pull of this area on the standard card.

D4

1. The animal response, especially the silhouette of a cat, was frequent when shading was removed and the area was made into a uniform grey (S).

2. The D4 area was seldom interpreted unless the Dds 26 area contrasted in "color" with it.

D5

1. Again, as with D1, the frequency of response to this area was considerably less for each series than one would expect from Beck's designation of locations.

D6

1. The data indicate that this area was responded to more often when the shading was eliminated (CS, S).

D7

1. Responses were given most frequently on the line and silhouette figures (CF, F, S).

D8, D9

1. Structure did not affect frequency of interpretation.

Dd 23

1. These small dots were interpreted as islands with a remarkably high frequency on both W and CF. This would appear to be an excellent example of how the pulling power of a small area can be affected by total blot structure.

Dd 24

1. The shape of this area conforms closely to that of bell, but only *Ss* in group CS reported such a percept. If

one should get this response on the standard series it would suggest that *S* was somehow able to "rise above" the pulling power of the more commonly perceived D3 and D4 areas. Like "hidden figures" the form is there, but most *S*s do not see it unless the blot is altered to assist them.

Dd s 26

1. Islands or lakes (usually as part of a whole response) were most common on the line figure (F, CF).

Upper ½ of D4

1. Anatomical responses to this area were dependent upon shading, in most instances.

Total R

1. The total number of responses given to card I was little affected by blot structure, although the trend was toward more responses on CS and CF.

CARD II

W

1. Animal responses to the whole card were most frequent on the shaded (A) and complex form (CF) series. Bears and chickens (as two forms) tended to predominate on A while butterfly and crab (as single forms) were most common on CF.

2. As on card I, geographical responses were relatively frequent on the line series (CF, F).

3. The effect of structure upon response was graphically illustrated in the distribution of human percepts. About three-fourths of the *S*s in groups S and W saw two persons. Groups F and A were next high followed by groups CS and CF. Only 11 out of 162 *S*s gave such a response to the standard blot (C). The achievement of such a percept on the C blot would thus suggest an ability to overcome structure effects which block total integration for most *S*s.

4. Whole responses were much less frequent on the C blot, indicating color effects.

D1

1. Color sets D1 off as a distinct area, and led to enhanced pulling power on the C blot.

2. It is interesting also that on CS (where shading is absent) there were 20 responses of either dog or dog's head but no bear responses. When D1 was shaded (C, A) responses to this area were about equally divided between bears and dogs. The suggestion is that shading may be critical for the emergence of the bear response.

D2

1. Animal responses were most frequent on CF, but they varied widely in type. Bird heads were relatively common on A while winged animals were most common on C.

2. Blood responses occurred only on the colored blots, although reports in the literature (3) indicate that occasionally such responses are given to achromatic blots.

3. Human hand and foot responses were much more frequent on series CS.

4. Frequency of interpretation of this area was dependent upon its being separated sharply from the remainder of the blot. Color, a line, or contrast variation are different ways of doing this. Total R was about the same on C, CS, and CF but appreciably lower on the remaining series.

D3

1. The frequency of interpretation pattern was quite similar for that of D2 just reported.

2. Butterfly responses were as common on CS and CF as C, thus indicating the primacy of a form determinant.

3. Blood responses were given only on C.

4. Fire percepts, however, occurred on CF as well as C. The flame-like projections were probably important in this regard.

D4

1. The pull of this area was greatest on CS.

Ds5

1. There were many more responses to this area on the line and white figures (CF, F, W).

2. The lamp percept was infrequent

on C and A compared to the other series.

D6

1. This area was interpreted most frequently when D2 and D3 were colored.

D7

1. Responses to D7 were so rare that Beck's classification of this area as a major detail must be seriously questioned.

Dd 25

1. The icicle and stalagmite responses were most common when these projections were either shaded (A) or white (W, CF, F).

Dd s 29

1. Response frequency was elevated on W and F.

Dd s 30

1. This area, which was never interpreted on the standard card, evoked responses from about 12 per cent of the *Ss* in group W.

D2 + D3

1. Formation of a percept involving these two widely separated areas was dependent upon their being colored.

Total R

1. Again productivity tended to be high on CS and CF. The achromatic blot elicited fewer responses, however, than did the colored blot. The silhouette form (S) was very difficult for most *Ss* to give more than one response to. W was less difficult in this regard, primarily because of the greater ease with which figure-ground reversals took place. (W had 30 more space responses than S.)

CARD III

W

1. Whole responses were infrequent on card III; color neither raised nor lowered their frequency.

2. Line figures again provoked more geographical responses.

D1 and D9

1. Fewer responses to this area occurred on the solid grey, solid white, and simple form series (S, W, F).

2. Bird responses were most common when the area was either shaded or solid white (C, A, W).

3. Dog percepts occurred on only the shaded and complex silhouette blots (C, A, CS).

4. The frequency of the human percept was elevated on CF.

D2

1. The tendency was for color to depress the number of responses to D2, probably because the color was oftentimes difficult to reconcile with the form suggested by the area.

2. There is a suggestion that color may have facilitated the stomach and anatomical responses in general, but the data are only suggestive in this regard.

3. Animal responses were not as frequent when the area was colored.

4. Blood percepts occurred only on C.

5. Botanical responses were more frequent when D2 was not colored.

D3

1. Fewer responses were given to this area when it was in white (F, W, CF).

2. Color tended to increase the number of anatomical percepts.

3. The butterfly response was given much more often when the area was a uniform grey (S); color did not facilitate this response.

4. The bow or tie percept occurred most frequently on CS; color did not play a significant role.

D4

1. This area was interpreted most frequently when it was not shaded (CS).

D5

1. Shading tended to facilitate the tree limb response.

D7

1. Responses were most frequent when this area was a solid white or grey (W, S).

2. Anatomical responses were not dependent upon shading.

D7 as part of D1

1. The interpretation of this area as fire was much more common on the

line figures (CF, F).

2. Pot-like responses were facilitated by the area being either a solid grey or a solid white (S, W).

Total R

1. As on the previous two cards, total R tended to be high on CS and CF. F, W, and S pulled the fewest responses.

CARD IV

W

1. Anatomical responses occurred most frequently when the card was shaded.

2. Ape-like animals were as common when the figure was white as when it was grey.

3. The bat was most common on the F blot.

4. Animal skin was considerably more frequent when the blot was shaded, but this response was found on each series.

5. Shading tended to reduce the frequency of the tree percept.

6. Most interesting was the fact that the human response was much less frequent on the shaded blot (C, A) than it was on the F, S, W, and CS blots. The shaded blot was high on animal responses whereas the non-shaded blots were relatively high on human responses.

D1

1. Animal responses (especially heads) were also comparatively common when this area was shaded (C, A).

D2

1. Series S and W had a high pull for shoes.

D3

1. The interpretation of this area as a flower was critically dependent upon shading. Other responses to the area were also infrequent without shading.

D4

1. On the line figures a number of Ss gave the response of bird head, making use of Dd s 31 as part of the head along with D4 proper.

2. The snake percept was most common on CS.

D5

1. This area is most clearly demarcated on CF and CS; the frequency of response to this area was correspondingly high on these two series.

2. The spine response, however, was given 15 times on the shaded blot (C, A) but only once on the remaining series.

3. About one-half of the responses on CF involved a tree trunk, an infrequent response on other series. A smaller number of Ss saw this area as a human arm or leg (only on CF).

D6

1. When the line dividing D2 and D7 was emphasized (i.e., on CS and CF) the boot response became infrequent.

D8

1. Animal responses (primarily dog heads) were least frequent on the shaded card; the reason for this is not clear.

Lower part of D1

1. On the standard card Ss frequently gave an animal head response to all of D1; on series F an animal head was seen with about equal frequency but Ss restricted it to the lower portion of D1.

W minus D1

1. As with the whole card, human responses tended to be more common when shading was removed.

Total R

1. CF pulled more responses than did the other cards, which were roughly comparable to each other.

CARD V

W

1. Whole responses were very common on all series and not markedly affected by blot structure.

2. The butterfly response occurred with a frequency equal to or greater than that for the bat on each series, a reversal of the relationship found on card I.

3. The bat was almost as common on the white figures (W, CF, F) as on the grey figures (C, A, CS, S).

4. Geographical percepts were again most frequent on F.

D1

1. CF evoked more animal legs than the other series whereas CS pulled the most human legs.

D2 and D8

1. There was a pronounced increase in the number of human leg percepts when shading was eliminated but the area retained its separateness (i.e., CS).

D3 and D9

1. These areas were interpreted somewhat more often on the line series (CF, F).

D4

1. Frequency of interpretation was not affected by structure, but animal interpretations were most common on the uniformly white figures (W, F).

D5

1. *S*s did not define this as an interpretive area when the figure was white (W, CF, F).

D6

1. Structure had no clearly defined effects.

D7

1. Responses were most frequent on CS and W.

2. The rabbit percept was especially common when the figure was uniformly white (W, F).

3. There was a pronounced tendency to see this area as a human on CS.

D10

1. This area pulled more responses on the line series (CF, F) than on the remaining series.

Dd 30

1. This area was more sharply delimited on CS than on any other series and the resulting frequency of response was higher. It was always seen as a human head on CS.

Cut-off wholes

1. These were most common on CS, due primarily to the sharp gradient between D1 and the remainder of the blot.

Total R

1. CS and CF again evoked more responses than did the other blots.

CARDS VI

W

1. The uniformly white blots (W, F) produced the greatest number of whole responses.

2. Uniformly white and uniformly grey blots (F, S, W) evoked a relatively high frequency of cat percepts. (W was also high on dog.)

3. Shading did not affect the frequency of skin responses.

4. Turtle percepts were limited almost completely to blots having some variation in shading (C, A, CS).

5. Human responses tended to be most common on the uniformly grey and white blots (S, W, F).

D1

1. When S responded to the entire blot shading did not affect the frequency of skin responses, but when *S* restricted himself to D1 shading did make an appreciable difference (C and A were higher).

2. Human percepts were pulled most frequently by the line figures (CF, F).

3. Shading increased the frequency of response to D1.

D2

1. This area was delimited most sharply on CS and CF, with consequent rise in frequency of interpretation. CF was especially prone to draw a human response.

D3

1. Cat heads were relatively frequent on uniformly white and grey blots (S, W, F), just as cat responses to the whole blot were comparatively frequent on these series (see above).

2. Frequency of total responses was not affected by blot structure, except on CS where it was lowered.

D4

1. The number of responses to this area was little affected by the presence or absence of a central dividing line.

D5

1. When this area was delimited sharply (CS, CF) the number of responses to it increased, candles and posts being most common.

D6

1. Separate interpretation of D6 was least common when this area was most continuous with the remainder of the blot (S, W).

D7

1. There was little variation due to structure.

D8

1. Again as for the whole blot and D3, cat responses were relatively common on S, W, and F. These series also pulled the largest total number of responses.

D9

1. Percepts were most frequent on CS, with dogs head being the preferred response for two-thirds of the *S*s.

D10

1. Response to this area was quite rare.

D11

1. This area was most sharply defined on CS, and responses were more numerous than on the other series.

D12

1. Blot construction unduly emphasized this area on CS and CF, with a resultant rise in the frequency of interpretation.

Dd 26

1. Many more responses to Dd 26 were given on the CS series; all but one involved some kind of animal whiskers.

Total R

1. Overall productivity was again high on CS and CF; fewest responses occurred on S.

Card VII

W

1. Shading tended to increase whole responses, although they were even more numerous on the line drawings.

2. Animal percepts were relatively more frequent on the shaded cards, except for a comparably high frequency on CF.

3. Clothing (especially collar) responses were fairly common on the simple form series (F).

4. Thirty cloud percepts occurred when the blot was shaded, but only four such percepts were given to the other five series.

5. The line figures did not have a greater pull for geographical responses, as was true for some of the earlier cards.

6. Series F evoked a relatively high frequency of chair responses.

7. Human responses were most common on the white (W, F, CF) and uniformly grey (S) blots.

D1

1. Responses to CS were most numerous; most of these involved the human head.

2. The shaded cards (C, A) tended to have the greatest pull for animal responses.

D2

1. The shaded cards (C, A) and the line figures (CF, F) were relatively high on animal responses, dogs being most frequent.

2. CS, S, and W were high on human responses.

D4

1. The butterfly response did not occur unless this area was solid along with a clear specification of the body area of the butterfly (C, A, CS).

D5

1. Structure did not affect frequency of response.

D6

1. CF and CS delimited this area most sharply, and frequency of response was greatest on these blots.

Ds7

1. There was some tendency for more frequent figure-ground reversal on W, but this trend was not pronounced.

D8

1. Shading tended to increase the frequency of interpretation.

D10

1. Interpretation was limited to those series having a central dividing line (C, A, CS), with one exception.

D11

This area is most clearly defined as a form on CF and responses were more common on this series.

Total R

1. Once again CS stimulated the greatest productivity while responses were least numerous on S and W.

CARD VIII

W

1. The number of whole anatomical responses was greater on the colored than on the achromatic card, although the remaining experimental cards were equal in pull with the C card.

2. D1 elaborations of the animal response were much more frequent on the achromatic card than on the colored card or other modifications.

3. *S*s often give color as the basis for an art response on card VIII, but art responses were of about equal frequency on the several series.

4. The line figures (CF, F) again pulled more geographical responses than the other series.

5. Color and shading did not affect the total number of whole responses, but these were most numerous on CF and F.

D1

1. Almost all *S*s in all groups reported an animal percept, except for a marked reduction on the line figures (CF, F).

2. The bear response was more frequent when the area was not colored, or not in white.

3. Color reduced the number of cat-like responses.

4. The rat was most common when the area was shaded but without color (A).

5. There was a marked tendency for various types of rodents to be reported more frequently on the colored blot than on the other series.

6. The D1 area was attended to least frequently on the line figures (CF, F).

D2

1. Butterfly responses were much more common when this area was colored.

2. Flower responses were also highly dependent upon color.

3. Twenty *S*s reported ice cream percepts; they were all on the C card.

4. When color was removed from this area but shading was retained, more landscape responses became more numerous.

5. Total productivity on D2 was highly dependent upon color and shading.

D3

1. The large majority of responses on all series involved anatomical content, primarily some variation of ribs. The pull of this area for such responses was decidedly greater on W.

D4

1. The frequency of the tree percept was not related to structure.

2. The line figures (CF, F) evoked more mountain responses than did the other series; the total number of responses was also somewhat greater on these figures.

D5

1. Response totals were low on all series; they were not markedly affected by structure.

D6

1. The white blots (W, CF, F) pulled comparatively few responses to this area.

D7

1. This area was not interpreted unless its upper boundary was sharply delimited (C, A, CS, CF).

D8

1. The tree response was relatively frequent when this area was either white or a uniform grey (F, CF, S, W).

Dd24

1. This area was interpreted more often when color and shading were eliminated (CS, S, W, CF, F).

Dd26

1. Responses to this area were relatively frequent on CS; an animal head was the most common response.

Dds28

1. The line figures (CF, F) pulled a number of responses to this area.

Total R

1. Color did not affect productivity. Again CS was high on total responses while S and W were low.

CARD IX

W

1. Whole responses were more frequent on the colored card than on the achromatic or complex silhouette.
2. An animal face was relatively common on series F.
3. Art responses were most frequent on the standard series, suggesting an important role for color.
4. Explosions were also most common on C, but similar responses were given to most of the remaining series.
5. The line figures (CF, F) again led in geographical responses.
6. Human responses and mask responses were comparatively frequent on the white figures, and the solid grey figure (S, W, CF, F).
7. Shading was critical for the emergence of landscape percepts.

D1

1. When shading and color were eliminated responses to D1 became much more frequent; the content was predominantly human (CS).

D2

1. This area was defined on only C and A; its pull was much greater when colored than when achromatic.

D3

1. Human responses tended to increase when color and shading were eliminated (CS).
2. Witch percepts were reported on all series except W; the highest frequencies were on CS and CF.

D4

1. Color decreased the number of human heads whereas shading markedly increased their frequency (compare C, A, and CS).

D5

1. This area was delimited most sharply on CS and CF, with a resultant increase in frequency of response.

D6

1. The data indicate that shading was not necessary for the cloud percept to emerge.
2. D4 human elaborations were most common when the area was shaded (C, A).

D7

1. The white figures (W, CF, F) pulled the most responses to this area.

Ds8

1. Ice and water percepts occurred only on the colored card.

D9

1. CS produced the most responses, due primarily to the special emphasis placed on D5 on this card.

D10, D11, and D12

1. Responses to these areas were relatively infrequent.

Total R

1. Color tended to increase productivity on card IX, although CS was equally high. S and W again elicited the fewest responses.

CARD X

W

1. There were fewer whole responses to card X than to any other card. The structural properties being investigated had little affect upon this frequency, however.
2. Groups of insects were seen on every series except those in white (W, CF, F).
3. Color had some tendency to increase the number of art responses.
4. Geographical percepts were again relatively common on the line figures (CF, F).

D1

1. This area was not interpreted as frequently on the line figures (CF, F).
2. The white figures were seen least often as spiders (F, CF, W).
3. Although this area is blue on the

standard card, the response of lakes was most common on the line figures (CF, F).

4. Also, although the ink response was most frequent on C, it was also given on each of the remaining series except S.

D2

1. The dog percept was most common when this area was solid but not shaded (CS, S, W).

D3

1. Seed like percepts were relatively more frequent on the colored card whereas the wishbone was comparatively common on the line figures (CF, F).

D4

1. Color markedly facilitated the caterpillar or worm response.

2. The turkey head became more frequent when color and shading were eliminated (CS, S, W, CF, F).

3. There was a sharp rise in sea horse percepts on the line figures (CF, F).

4. The white figures (W, CF, F) pulled a large number of leg and chap responses.

D5

1. Color markedly increased the number of responses to this area; the content was usually rabbit head.

D6

1. Color and shading elevated productivity on D6 (C, A).

D7

1. Color tended to stimulate productivity on this area.

D8

1. There was a pronounced increase in frequency of interpretation on CF and CS; almost all of the responses were in the animal category. The accent on the eye in these two modifications appeared to be the responsible factor.

2. Insects, however, were much more common on the colored blot.

D9

1. Animal content did not occur on the white blots (W, CF, F).

2. Human percepts became much more common when color and shading were eliminated (CS).

D10

1. S and F pulled the most responses.

D11

1. The frequency of two animals next to D14 was directly related to the clarity of the eye in D8; C, CS, and CF were high.

D12

1. CF and CS pulled more responses than the other series.

D13

1. Shading increased productivity on D13 (C, A).

2. The dog was most frequently seen on C and A while a map was reported most often on the line figure (CF, F).

D14

1. There was considerable variability between the series, but the reasons for this are not apparent.

D15

1. The flower percept was critically dependent upon color.

Dds29

1. Interpretation of this area as a turtle was relatively frequent on F, whereas a human was more commonly perceived on W.

Dds in D5

1. This area "stood out" more on the line figures (CF, F); it was usually seen as a horseshoe.

Total R

1. Productivity was high on the colored card as well as on CF and CS. Series S and A evoked the fewest percepts.

DISCUSSION

The data have been presented in detail so that the students and users of the Rorschach will be able to make use of the tables as basic references in their work. Remarks here will be limited to a few major points, since it is obvious that the data could be used to develop a separate paper discussing the gestalt properties of each blot, much as Klein and Arnheim (12) have done from a more subjective viewpoint.

First, it is clear that properties of inkblots other than their form do affect the responses of *Ss*. Earlier and more limited studies (2, 3) had arrived at a somewhat different conclusion; in doing so they contradicted both clinical experience and common sense, if not perceptual theory. The small number of *Ss* in many studies, the limited number of dependent variables considered (especially the failure to treat content thoroughly), and the restriction of most studies to the color variable probably account for the early findings.

The effect of structure upon content scores appears to be fundamental, although the results summarized in Table II indicate that formal scores are also affected, even when productivity differences are controlled for. The differences in M, FM, A%, and P, however, can be traced to content since their scoring is directly linked to the content given by S. Two other scores, D and S, are not linked to content in this fashion and the data leave no doubt of their dependence upon structure. In addition individual card analyses make it clear that structure may affect formal scores on a particular card even though the analysis of total scores (i.e., over all ten cards) had failed to suggest such a relationship. For example, on card II the frequency of whole responses is intimately related to structure (see Table IV) whereas the total analysis (see Table II) had not indicated that structure affected the W score. The reader will of course recognize that a particular blot attribute, such as color, may increase the likelihood of a W response on one card while decreasing the likelihood on another card, thus laying the foundation for compensating differences.

Second, the data suggest that certain responses are critically dependent upon a given blot attribute and that one can make this statement independently of what S might or might not have said during an inquiry period. For example, on card VIII 20 *Ss* gave an ice cream response to the D2 area on the C card while no *S* gave such a response to any of the remaining series. It is fair to conclude that color is a primary and critical determinant of this response even though *S* might indicate color to be secondary to form, or possibly not mention color at all. Other examples can be gleaned from Table XIII, and have been briefly noted in the section on results.

Actually Table XIII can be used in a probability sense for estimating the most probable determinants of at least the more common responses. In a way Table XIII creates a Meehl-type cookbook (13) for scoring Rorschach determinants, although to be used successfully as such it would probably be necessary to base such a table on literally thousands of *Ss*. To give an example of how such a table might work, however, let us say that our *S* reports the perception of clouds on card VII and he indicates that the whole blot looks like this. Turning to clouds under W in Table XIII we find that 30 *Ss* gave such a response when the card was shaded, but only 4 *Ss* gave this response on the modifications. Without inquiring of *S* we can "bet" that he is responding to shading and score accordingly. Introspection is eliminated!

Careful examination of Table XIII, however, points up the fact that most responses are form determined rather than being dependent upon color and shading. Even with a very large population of *Ss* we should probably be able to find only a limited number of percepts whose frequency distributions would make us confident that color and/or shading were critical determinants.

Third, in a similar fashion Table XIII can be used to give us a probability estimate of how accurate *S* is in telling us the determinants of his response if we use an inquiry. For example, if he tells us that D4 on card X looks like a worm because it is long and thin like a worm, the data in Table XIII would make us question whether or not he is aware of a probable significant determinant of his response other than form. Theoretically, by using a number of such distributions, one might be able to create an index which would scale individuals in terms of their awareness of the determinants of their perceptions. Such an index could have a number of interesting applications to the areas of personality and psychopathology.

Finally, it is evident that it is difficult to generalize regarding color and shading effects on the Rorschach although this has been done many times. Color may have facilitating or inhibitory effects for a given *S*, but one must also consider carefully the context of each individual card; similarly for shading and other blot properties. As an example, data in Table XIII is suggestive regarding shading as a stimulator of the anatomical response to the whole of card I, but on card II shading is not effective to the same degree. On card III (to D3) color does not facilitate the butterfly response, yet on card VIII (to D2) there is the definite indication that it does influence the emergence of this class of response. To evaluate properly the effects of such blot attributes one must consider carefully the other properties of the stimulus in question. It is hoped that the data presented will make such consideration a more realistic possibility for users of the Rorschach technique.

SUMMARY

Six modifications of the Rorschach inkblots were constructed, each series differing from every other series in terms of stimulus structure. Blot properties such as color, shading, and figure-ground contrast were varied in a systematic manner but basic form was held constant.

Each of the six experimental series of blots was administered to separate groups of adult *Ss*. Two additional groups were given the standard Rorschach test, one with the regular inquiry and the other with a paired-comparison inquiry. There were 81 *Ss* in each of these 8 groups; the groups were not significantly different from one another with respect to the variables of age, sex, intelligence, and education.

The data were evaluated in order to determine the relationship between blot structure and behavior on the Rorschach. Formal scores as well as content scores were considered in detail, both for the test as a whole and for each individual card. Analysis indicated many effects due to structure, and makes it necessary to reconsider earlier more limited studies which questioned the reality of structural effects.

REFERENCES

1. Allen, R. M. The influence of color in the Rorschach test on reaction time in a normal population. *J. proj. Tech.*, 1951, *15*, 481-485.

2. Baughman, E. E. A comparative analysis of Rorschach forms with altered stimulus characteristics. *J. proj. Tech.*, 1954, *18*, 151-164.

3. Baughman, E. E. The role of the stimulus in Rorschach responses. *Psychol. Bull.*, 1958, *55*, 121-147.

4. Baughman, E. E. A new method of Rorschach inquiry. *J. proj. Tech.*, 1959, *22*, 381-389.

5. Baughman, E. E. The effect of inquiry method on Rorschach color and shading scores. *J. proj. Tech.*, 1959, *23*, 3-7.

6. Beck, S. J. *Rorschach's Test. I. Basic processes.* (2nd ed.) New York: Grune & Stratton, 1949.

7. Beck, S. J., Rabin, A. I., Thiesen, W. G., Molish, H., & Thetford, W. N. The normal personality as projected in the Rorschach test. *J. Psychol.*, 1950, *30*, 241-298.

8. Belden, A. W., & Baughman, E. E. The effects of figure-ground contrast upon perception as evaluated by a modified Rorschach technique. *J. consult. Psychol.*, 1954, *18*, 29-34.

9. Cronbach, L. J. Statistical methods applied to Rorschach scores: a review. *Psychol. Bull.*, 1949, *46*, 393-429.

10. Fiske, D. W., & Baughman, E. E. Relationships between Rorschach scoring categories and the total number of responses. *J. abnorm. soc. Psychol.*, 1953, *48*, 25-32.

11. Holtzman, W. H. Objective scoring of

projective tests. Paper read at symposium on personality assessment, Louisiana State University, February, 1958.

12. Klein, A., & Arnheim, R. Perceptual analysis of a Rorschach card. *J. Pers.*, 1953, 22, 60-70.

13. Meehl, P. E. Wanted — a good cookbook. *Amer. Psychologist.*, 1956, *11*, 263-272.

14. Sarason, S. B. *The clinical interaction.* New York: Harper, 1954.

15. Small, L. S. *Rorschach location and scoring manual.* New York: Grune & Stratton, 1956.

16. Waller, Patricia M. Correlates of Rorschach shading scores obtained with two methods of inquiry. Unpublished doctoral dissertation, Univer. of North Carolina, 1958.

Received August 26, 1958

Rorschach Signs of "Organicity": A Physiological Basis For Perceptual Disturbances

HERBERT G. BIRCH AND LEONARD DILLER
Department of Physical Medicine and Rehabilitation, New York Medical College, and
Institute of Physical Medicine and Rehabilitation
N.Y.U. — Bellevue Medical Center

The psychological evaluation of persons with definite damage to the cerebral cortex is pursued for two reasons. On the one hand it is important to determine the degree to which disturbances in the nervous system affect adaptive behaviors. Unless this is done it is either difficult or impossible to devise appropriate life situations and/or training techniques. On the other hand, the examination of patients with known cerebral damage through the use of psychological tests lays the basis for finding signs in psychological functioning that will permit one to determine the existence of central nervous system damage in patients who as yet have not been so diagnosed. Further, such an investigation helps to lay a basis for a better understanding of cerebral functioning in general (3, 12).

The attempt to find definitive psychological sequelae of cerebral damage has given rise to a whole series of reports (2, 10, 11, 12, 14, 16, 17, 24, 36, 27) concerning behavioral indicators which can, with greater or lesser success, predict the existence of cerebral dysfunction. Perceptual indicators have been among the most popular items utilized to this end, and the Rorschach test has occupied a prominent position in the array of instruments used. However, as a number of investigations indicate, many individuals, who, on independent study, are known to have cerebral lesions, do not show the kinds of perceptual peculiarity on psychological testing that have been utilized as indicators of "organicity". Any and all psychological signs that have been used produce equivocal results, and do not provide an adequate basis for differential diagnosis. This situation has been particularly true when the Rorschach test has been used as the instrument for diagnosing cerebral damage.

In 1937 Piotrowski reviewed the Rorschach literature and proposed on empirical grounds his now famous list of signs for the detection of intracranial pathology (34). The chief value of the sign list lay in the fact that it directed the examiner's attention in a systematic way to an aggregate of response dimensions that could be altered by cerebral damage. The signs Piotrowski suggested included low response total, small number of movement responses, long reaction time, low percentage of popular responses, low positive form percent, color naming, impotence, perplexity, repetitiveness or perseveration, and automatic phrasing. While some of these signs are not unique to the inkblot situation and can also be elicited in other test situations (e.g. in the Goldstein-Scheerer Test) the Rorschach test nevertheless, offers a familiar and systematic tool for clinical use. This is attested to by the overwhelming popularity of this instrument in clinical circles as well as by the amount of research energy that has been mobilized around the problem of predicting cerebral damage by means of Rorschach testing. Table I summarizes some of the more important researches on this question from 1937 to the present time. The popularity of the Rorschach test invites intensive consideration of the evidence for the validity as an indicator of cerebral damage.

It should be pointed out that, although the Rorschach test has been a widely accepted instrument, critics who are otherwise friendly to the test have expressed skepticism as to its

TABLE I—*Summary of Rorschach Studies Using Piotrowski Signs On Brain Damaged Population*

Author	*Brain Damaged*	*Controls*	*Results*	*Conclusion*
1. Piotrowski (34)	18 types, not specified	10 non-cerebral CNS 5 conversion hysteria	1. Presence of 5 of signs R, RT, M, C_n, $F+\%$, P, Ppt, Imp, Pip, AP. Distinguishes B.D. 2. B.D. avge. 6.2 signs controls 1.5 signs	Signs valid
2. Nadel (32)	15 frontal lobe B.D.	15 non-frontal B.D.	1. Frontal lobe avge. 5.1 signs Non-frontal lobe avge. 1.6 signs	Signs valid for only frontal lobes.
3. Harrower-Errickson (14, 15)	10 pre-op-18 post-tumor cases of all kinds in all areas of brain		1. Pervasive constriction and restriction of personality on Rorschach. 2. Piotrowski's signs. "In general the results from my method and P's were in agreement, but there were cases in my pre-op group in which only 2 or 3 signs occurred". p. 887	Signs valid, not always accurate.
4. Hunt, T. H. (21)	40 pre-post lobotomy-schizophrenics		Changes on test minimal. Only 1 patient gave 6 signs.	Signs not valid.
5. Kisker, G. W. (23)	20 pre-post lobotomy-schizophrenics		Five signs are common, but no data is offered. Several Piotrowski signs occur in pre as well as post-op records. Therefore, must be function of pre-morbid personality.	Signs—limited validity.
6. Brussel, J. A. Grassi, I. Melniker, A. A. (6)	5 post concussion	11 varied psychiatric	Complete agreement in blind diagnosis with psychiatric judgment. Piotrowski signs used, but no data given.	Signs valid.
7. Aita, J., Reitan, R., Ruth, J. M. (1)	60 varied post was trauma	100 non-cerebral cases. Neurologic wards.	Imp, Pplx, Rpt, Ap and Cn are useful indices. The others except for $F+\%$ are useful in several cases. Nine additional signs are proposed.	Signs valid but need supplementation.

Note—Individual case studies are not included.

TABLE I – (*continued*)

Author	*Brain Damaged*	*Controls*	*Results*	*Conclusion*
8. Hughes, R. (20)	50 varied brain damaged	68 schizophrenics 74 neurotics 22 nurses	Piotrowski signs detect 20% of organics without falsely identifying a non-organic. Weighted signs based on factor analysis - more effective.	Signs–limited validity, need supplementation.
9. Kral, V. & Dörken, H. (26)	52 dementia paralytica		Piotrowski signs detect– a) 27% – G.P.I. (N. + 26) b) 57% – senile dementia (N = 30) c) 50% – localized cortical lesions (N = 10) Kral & Dörken scale based on absence of 7 common Rorschach categories are more effective.	Signs limited validity, need supplementation.
10. Kral, V. & Dörken, H. (28)	9 cases - lesions in diencephalon	6 cortical cases 5 basal ganglia 6 extrapyramidal	1. Diencephalon cases avge. 5.7 signs; 8 of 9 cases gave more than 5 signs. 2. No data on other groups	Signs–valid, need supplementation.
11. Kral, V. & Dörken, H. (27)	10 hyperkinetic with cortical involvement	10 akinetic - pallidum - substantia nigra system	1. Hyperkinetic avge. 5.1 signs Akinetic avge. 2.3 signs 2. Hyperkinetic similar to cortical	Signs valid–need supplementation.
12. Dörken, H. & Kral, V. (10)	a) 10 cortical extrapyamidal b) 10 hyperkinetic c) 10 diencephalon d) 10 extrapyramidal akinetic e) 10 diffuse organic f) 10 senile dementia g) 20 schizophrenia h) 10 manic depressive i) 10 neurotics j) 10 normals - superior I.Q. k) 10 normals - avge. I.Q.		1. Number of cases – 5 a) 50 b) 60 c) 80 d) 10 e) 50 f) 50 g) 50 h) 20 i) – j) – k) – 2. K & D signs more effective	Signs–limited validity, need supplementation.

Author	*Brain Damaged*	*Controls*	*Results*	*Conclusion*
13. Hertz, M. & Loehrke, L. (18)	*50 post traumatic, V.A. cases*	*50 schizophrenics* *50 anxiety*	*1. Scorer agreement on signs—very high* 2. 5 or more signs in 26% organics, 8% neurotics, O normals. 3. Absence of signs does not contraindicate organicity. Signs present in "only small percent of cases".	Signs—limited validity.
14. Fisher, J. Gonda, T. & Little, K. (11)	84 B.D. random admissions to Neurology	34 non-B.D. admitted to Neurology.	1. Piotrowski signs pick up B.D. (32 of 34 cases) but miss many B.D. Does not misidentify non-B.D. 2. Piotrowski signs show no shrinkage in correlation whereas all other proposed signs do.	Signs—limited validity.
15. Reitan, R. M. (39, 41)	18 aphasics 18 non-aphasic B.D.	18 varied psychiatric	Imp and Pplx (.01 level) When 5 Piotrowski signs are added to Aita's 9 B.D. differ from control (.001)	Signs—limited validity.
16. Reitan, R. M. (40)	28 B.D. - CVA, tumor, epilepsy	28 neurosis 28 brucellosis	(Same as 15)	Signs—limited validity.
17. Reitan, R. M. (38)	15 neurosis 15 myxedema		(Same as 15)	Signs—limited validity.
18. Reitan, R. M. (37)	13 B.D.	13 hypertensives 13 neurosis	(Same as 15)	Signs—limited validity.
19. Reitan, R. M.	13 B.D.	13 multiple sclerosis 8 neurosis 5 paraplegias	(Same as 15)	Signs—limited validity.
20. Reitan, R. M. (36)	50 B.D.	50 non-B.D.	1. Imp. Plpx (.001), Rpt (.01), F+% (.02), T/R (.05), signs = .001 2. Big overlap – for clinical diagnoses	Signs—valid but not accurate for clinical purposes.

utility as an instrument for detecting cerebral pathology. Thus Klebanoff, *et al* (24) in their comprehensive review of the psychological consequences of brain damage note that "the Rorschach has thus far offered little that is new towards the understanding of the personality of the brain damaged" and further, that "It is unfortunate that most studies . . . have utilized the Rorschach test". In another paper Hertz and Loehrke (18) state that, "it may be seen that studies utilizing the signs of Piotrowski for diagnosing cerebral defect show contradictory and inconclusive negative results". Inspection of Table I will help the reader to appreciate the basis for the expressed skepticism. It can be noted in this table that the sign list of Piotrowski has been utilized in the examination of almost all the major types of brain damage. The kinds of cases studied have included patients with intracranial tumors, cerebral vascular accidents, traumatic injuries, lobotomies, dementia paralytica, senile dementia, etc. Further, the loci of injury have involved almost all areas of the brain. The nature of the control groups, too, has varied from study to study. A clear view of the evidence is made difficult, or even impossible, by the fact that the various parameters of cerebral dysfunction have not been examined systematically. Despite these difficulties, some general conclusions may be drawn on the basis of the investigations summarized in Table I.

Three general criticisms have been leveled against the use of the Piotrowski signs in the detection of cerebral damage. The first complaint is that other signs or scoring systems are more discriminating and should be used in place of the Piotrowski method. However, the alternative methods that have been used successfully in one investigation have shown no distinctive advantage over the original Piotrowski list when they are applied in new situations. Secondly, many studies suggest that while the Piotrowski signs are accurate they are insufficiently sensitive for differential clinical diagnosis of cerebral damage. The third and by far the most important criticism asserts that the Piotrowski sign list is inadequate since it produces too many false negative diagnoses. That is to say, that many individuals who do have brain damage do not perform on the Rorschach test as "brain damaged individuals should".

It is possible that all of these criticisms and, in particular, the major criticism of too many false negative diagnoses are not so much the consequence of the inadequacy of the Piotrowski signs of brain damage as they are consequences of the naivete of the concept of "organicity" itself. The concept is not a neurophysiologic concept but a behavioral one. It involves the idea that certain patternings of behavior, and psychological functions exist which are the result of damage to the cerebral hemispheres. The fact of "organicity" cannot be denied. Further, it is clear that the behaviors described under the concept almost never occur in the absence of cerebral damage. However, there is no good reason for assuming that the converse of this proposition is true. Namely, that cerebral damage never occurs without the consequent production of "organicity" in behavior. Rather, the evidence suggests that organicity in behavior is the consequence of *some* kinds of cerebral damage and not the consequence of other kinds of cerebral damage. Therefore, one can conclude that when the Piotrowski signs are present under circumstances in which neither mental retardation nor severe cultural deprivation is suspected (45) cerebral damage is also present, but one cannot conclude that cerebral defect is absent when the Rorschach test does not exhibit signs of organicity.

It appears to the present writers that much of the confusion and conflict exhibited in the investigations summarized in Table I is the result of the idea that behavior can be correlated with anatomical change. This conception which has never been adequate must be replaced by a conception of the relation of behavior to physiological characteristics of cerebral functioning (3, 17). It is possible that behavior can be related to physiological events far better than it can be linked to the "mere facts" of anatomy.

A variety of contemporary investigations supports this viewpoint. The studies of Penfield (33) on the surgical removal of scar tissue areas of the cerebrum in cases of epileptic seizures suggest that under given conditions a larger amount of anatomical destruction of cerebrum may have less effect on behavioral indices than does a smaller area of destruction, The recent use of hemispherectomy (35, 5, 30) too, implies that the removal of an entire hemisphere may have less disturbing behavioral sequelae than does a lesser anatomical loss. These practices suggest that the behavioral disturbances are not the consequences of the removal of tissue *per se* but are rather the result of the physiological disturbances which lesions of a given character may produce. Hebb (16, 17) in several reports has emphasized this point and suggested that behavioral research be directed toward studying the physiological correlates of behavior rather than the anatomic ones at the structural level. In animal investigation the work of Lashley and Wade (44) indicates that the behavioral lacks after frontal pole removal in primates are not subtractive losses but are rather the results of active interference in residual cerebral functioning which a given lesion can produce. Krech (29), too, has raised this question in a recent theoretical paper. Cooper (9) most recently has shown, in studies of the subcortex, that partial damage of basal ganglia has more dramatic consequences for disturbed motor functioning than does the total obliteration of a ganglion. The clinical work in epilepsy, too, suggests that both psychological and physical signs of cerebral damage can be elicited in the epileptic patient shortly before or immediately after a grand mal seizure, but not at other times. Recent Russian investigations, as reported by Ivanov-Smolensky (22), also depart from a consideration of the anatomy of damage and focus attention upon the physiological consequences of cerebral defects, particularly as they relate to modifications of normal patterns of cerebral excitation and inhibition. Recent work on expressive aphasia by Birch (3), Birch and Lee (4), and by Cherry et al (7) provides additional material in support of this conception. In the light of all of these reports, it appears necessary to reassess the usefulness of Rorschach indicators of cerebral damage from the point of view of psycho-physiology rather than from the point of view of psycho-anatomy.

It is possible to approach the psycho-physiological problem by advancing the hypothesis that anatomical damage to the brain can be divided into at least two main functional categories. The first and simplest functional category is subtraction. Thus, a brain lesion in the occipital area, with the subsequent destruction of the visual cortex, may produce a subtractive defect in behavior, wherein one of the senses of the individual has been removed as a consequence of tissue destruction. If the lesion produces no other active interference with cerebral functioning, the amount of loss of function would be proportional to the amount of tissue destroyed, and, while lacks in behavior would be manifested, no signs of "organicity" at the psychological level need be found. A second functional category may be suggested in which the degree of psychological disturbance may be entirely out of proportion to the amount of tissue destroyed. Thus, a lesion may well produce behavioral difficulties because its activity adds new physiological dimensions to cerebral functioning and so actively and additively produces behavioral disturbances. In Penfield's studies, a small lesion, if irritative and additive, produced far more behavioral disturbance than the larger lesion which is surgically introduced to remove the irritative focus. This second category of lesion which has additive as well as subtractive consequences is probably the type of destruction that produces the so-called signs of "organicity".

Once such a hypothesis is advanced, it becomes possible to explore the validity of the Piotrowski signs from a new direction. It is suggested that the Piotrowski signs are valid indicators of disturbance in those individuals in whom cerebral damage involves active, additive physiological changes, and is not characteristic of the behavior of patients with lesions that are primarily subtractive in nature. On the basis of these considerations, it was possible to design the following investigation.

METHOD AND PROCEDURE

Patients: Twenty hemiplegic patients were selected at random from a large number of brain damaged persons undergoing treatment at a physical medicine and rehabilitation center. The sole criterion for the selection of each patient was the fact that his chart summary indicated that a detailed medical examination was in the record and that a complete protocol of a Rorschach examination was available. The patients ranged in age from 26 to 65 years with a mean age of 47.5 years. In the group of patients studied (16 M, 4 F), fifteen exhibited a left hemiplegia, four a right hemiplegia, and one showed no gross motor involvement. These patients are fairly typical of the brain damaged population to be found at a rehabilitation center.

On a random basis, the patients were divided into two groups of ten each: A) The Rorschach records of the first group were examined for the Piotrowski signs of "organicity". This analysis led to the separation of the group into two sub-groups of five patients each. The members of one of the sub-groups exhibited classical Rorschach signs of organicity, while the members of the remaining sub-group did not show such signs. B) The second group of ten patients was categorized on the basis of the medical record into two sub-groups. One of these sub-groups showed signs deemed to be indicative of active cerebral damage while the other failed to show such signs and, therefore, may be considered to be composed of individuals whose lesions are reflected primarily in passive or subtractive consequences. Five individuals, too, fell into each of these sub-categories.

Predictions were then made from the Rorschach record sub-groups as to the expectations for medical findings. In the group for which the medical findings served as the basis for dichotomization predictions were made to the Rorschach protocols from the medical evidence. This design involves the prediction of the type of medical record from a perceptual measure, and the prediction of perceptual organization from a medical record. It may, therefore, be considered as a double check experimental procedure which permits the cross validation of initial findings.

RORSCHACH MEASURES

The Rorschach signs of "organicity," developed by Piotrowski, were used. The signs include low response total, small number of human movement responses, long reaction time, low percentage of popular responses, low positive form percent, color naming, impotence, perplexity, perseveration, and automatic phrasing.

MEDICAL MEASURES OF ADDITIVE DISTURBANCE

Those medical indices which were a reflection of autonomic dysfunctioning, disturbances of consciousness, and integration of sensations, as well as neurological release phenomena of pathological nature, were used as indicators of an actively interfering physiological process. These indices were selected in the absence of a direct measure of neurophysiological disturbance. We, therefore, can only

TABLE II—A Comparison of Medical Signs of Consequences of "Additive" Lesions in Brain Damaged Patients Divided Into "Organic" and "Nonorganic" Groups on the Basis of Piotrowski's Signs (N = 10)

	Reflexes	Medication	Optic Exam	Blood Pressure	Lability	Disorientation	Convulsion	Field Defect	Total
Organic (N = 5)	4	5	2	2	3	2	2	1	21
Nonorganic (N = 5)	3	1	0	0	0	0	0	1	5

presume that disturbance in any of the areas selected *could* be due to the additive effects of pathological physiologic processes. However, it is likely that when disturbance in most of the areas cited occurred, it was *very probably* due to such pathological additions.

Explicity, we used the following indicators as reflections of possible additive defect:

1) Sensory disturbance (ocular examination, field defect, hemisensory syndrome)
2) Disturbance in reflexes (Babinski, Hoffman, spasticity, clonus)
3) Convulsive phenomena,
4) Autonomic disturbance (blood pressure, lability),
5) Disturbance in consciousness (disorientation and mental confusion), and
6) A composite measure of disturbed functioning based on the nature of the medication administered (e.g. use of barbiturates, sedatives, and/or anti-convulsants), was deemed to be a measure of the physician's clinical judgment which was related to the dimension we have postulated.

We, therefore, searched the medical charts in the areas indicated and, if a combination of these measures was uncovered, the patient was classified as exhibiting signs of a lesion having active additive consequences.

The following are the specific medical findings that were utilized:

1) Presence of convulsions
2) High blood pressure
3) Spasticity
4) Positive Babinski
5) Hoffman
6) Clonus
7) Nature of medication prescribed, i.e., necessity for the use of barbiturates, sedatives and/or anticonvulsants
8) Examination of ocular apparatus, e.g., eye ground, pupillary reflexes, accomodation, etc.
9) Emotional lability during neurologic examination
10) Mental confusion and disorientation during neurologic examination.[1]

RESULTS

As may be seen in Table II, when the first group of ten patients was divided into two sub-groups of five each, on the basis of whether they exhibited five or more of Piotrowski's signs on the Rorschach test, clear-cut differences emerged in the medical findings. The Rorschach "organic" group showed an average of 4.2 medical signs, while the Rorschach non-"organic" group showed an average of 1.0 signs per patient. The lack of overlap between the groups may be seen by the fact that four of the five patients in the Rorschach "organic" group had four or more medical signs, while the

---

[1] Obviously, the measures which were utilized represent a combination of objective events and of subjective clinical impression entered by the examining physician. Moreover, the measures themselves are relatively gross and refer to several levels of disturbance of function. However, despite these crudities, their analysis provided a substantial starting point for investigation.

TABLE III—The Presence of Rorschach Signs of Organicity in Brain Damaged Patients Divided Into Two Groups on the Basis of the Presence of Additive or Subtractive Lesions (N = 10)

	R	RT	M	CN	Pers.	Imp.	Prplx.	AP	P%	F—%	Total
Additive Lesion (N = 5)	4	0	3	1	4	4	5	1	4	4	30
Subtractive Lesion (N = 5)	3	0	3	0	2	2	0	0	0	0	10

maximum number of medical signs in the Rorschach non-"organic" group was two. The rank order correlation between the number of Piotrowski signs and the number of medical signs of "additive" lesion was .92. Thus, the direction of the medical findings in nine of the ten cases was clearly predictable from the Rorschach results. The data support the view that patients who produce "organic" Rorschach records show medical pictures which are different from those which are found in patients who do not have "organic" Rorschach records.

An analysis of Table III indicates that when the second group of patients was divided into two sub-groups of five each on the basis of whether they exhibited medical evidence of "additive" neurological defect, the group which exhibited evidence of "additive" defects had an average of 6.0 Piotrowski signs on the Rorschach, while the group which exhibited "subtractive" or "passive" defects showed an average of only 2.0 Piotrowski signs. Thus, we find that brain damaged patients who are differentiated into "additive" or "passive" subgroups on the basis of medical findings produce characteristically different patterns of Rorschach responses. Only one patient of the ten under consideration does not fit the original hypothesis. The rank order correlation obtained between the number of medical signs of "additive" defect and the number of Piotrowski signs of Rorschach "organicity" was .75.

Our results tend to substantiate the view that "organicity" on the Rorschach test is related to sequelae of an "active" neuro-physiologic disturbance. The potency of the relationship may be seen by the fact that when all twenty patients under investigation were combined and treated as a unit, it was found that 18 of the 20 fit our hypothesis. The rank order correlation between the number of Piotrowski signs and the number of medical signs of "additive" disturbance was .77. The probability that this result occurs as a consequence of sampling error is less than .01.

DISCUSSION OF RESULTS

A more intensive analysis of the data is productive of several points of interest. The Rorschach signs which Piotrowski utilized may be divided into two meaningful categories. The first pertains to traditional Rorschach dimensions and the second to clinical features of behavior which can be observed in response to any demanding task and are not unique to the Rorschach test itself. In the first group belong the low response total, absence of human movement, reaction time, color naming, low percent popular and low form-plus percent. Of this group, only the low popular percent and the low percent of good form responses are useful in distinguishing between our groups of patients. It is of importance to appreciate that alteration in these two scores reflects deviance in performance. The ineffectiveness of the remaining formal Rorschach measures as discriminators may be the consequence of the fact that alteration in these scores is a reflection of subtractive loss rather than a manifestation of deviation or distortion in performance. Furthermore, the low response total and the paucity of human movement responses which are the principle regions of overlap between our groups are precisely those measures which are particularly affected by depressed states. Therefore, abnormalities in these values may well reflect an individual's depressed mood in reaction to his illness rather than a primary disorder of neural integration.

The Rorschach indicators which are most effective in predicting the characteristics of medical status are those which the Rorschach test shares with other clinical devices. It is of interest to note that Rorschach records of ninety percent (90%) of the patient's exhibiting "organicity" show impotence, while one hundred percent show perplexity. On the contrary, zero percent (0%) of the non-"organic" groups show either of these signs. Perseveration is present in ninety percent of the "organic" patients and in fifty percent of the non-"organic" patients, and is obviously a more contaminated measure than is either impotence or perplexity. Automatic phrasing is present in forty percent of the "organic" patients and in zero percent of the non-"organic" group.

A study of Tables IV and V reveals which of the medical signs are most effective in distinguishing an "organic" from non-"organic" brain damaged patient. The primary medical findings which functioned to differentiate the groups are: (1) lability, (2) disorientation, and (3) convulsion. Medication appears in almost all instances to be administered in accordance with these characteristics and so serves as a composite measure which reflects the physician's attempt to modify these disturbing manifestations. It is probable that these findings refer essentially to disturbances in cortical-cortical and cortical-subcortical interrelations. Measures such as disordered reflexes and modified signs of sensory function are found with almost equal frequency in both groups of patients and are relatively useless as predictors of "organicity". Such measures as the results of optical examination and sphygmomanometry are suggestive in character, but provided no firm basis for differentiating Rorschach "organic" from Rorschach non-"organic" groups.

Our findings shed light on the Rorschach test as an instrument for the study of persons who are thought to be brain damaged. The test does not appear to be sensitive to brain damage *per se,* but it does reveal "organicity", one of the behavioral consequences of brain damage. We would prefer to think of "organicity" primarily as an impairment in organization of perceptions. The dimensions of this impairment have as yet not been well charted, however, the difficulty in attaining complex perceptions and the perceptual insecurities which are manifested by Piotrowski's signs appear to be relevant. It is, therefore, not surprising that an instrument like the Rorschach test which is sensitive to perceptions should be sensitive to "organicity". Other tests which require an integration of complex stimuli into meaningful Gestalten should also be expected to be sensitive to "organicity". The practical implications of our findings are: the presence of organicity on the Rorschach test is associated with brain damage. The absence of organicity does not mean that the individual does not have brain damage.

The findings point to another implication for clinical practice. There has been a growing tendency in Rorschach literature to ascribe specific value to different cards so that the stimulus "pull" of Card IV, for example, is alleged to represent one's reactions to authority and Card VI one's reactions to sexual stimuli. Indeed, several investigators (19, 31), have made successful predictions based on this notion. A hidden premise in this approach is that the cards have universal symbolic meanings. This would imply that people whose responses are similar are responding to similar symbolic representations. Yet our data would indicate that such a premise must be questioned. We would suggest that the "organic" patients in our group perform poorly not because of the symbolic meanings of the cards, but because they cannot perform the task of organizing an ambiguous stimulus field. Our conclusions in this regard receives some support from recent studies (8, 13, 46) which emphasize the fact that the response or even the same pattern of responses have different meanings for different people.

The results obtained in the present investigation strongly support the premises that served as initial motivators of the research. It is abundantly clear that "brain-damage" and "organicity" are terms which though overlapping are not identities and serve to designate interdependent events. "Brain-damage" refers to the fact of an anatomical destruction, whereas "organicity" represents one of the varieties of functional consequences which may attend such destruction. Our data support the growing belief that in a broad sense damages to the cerebrum may result in, at least, two readily distinguishable alterations in behavioral functioning. The first of these consequences can be called subtractive; the second may be termed "additive" or "reorganizational". An analogy may serve to clarify the distinction. If a hole is cut in a piece of leather the remainder retains its functional integrity and has simply decreased in total extent. However, if an equivalent area is removed from a soap-film the consequence is no longer the same. A total reorganization of the structuro-functional attributes of the system occurs. It was the recognition of these differences that led Von Monakow (43) to his concept of diaschisis and Goldstein (12) to his reorganizational views. In the nervous system when total reorganization does not take place, lesions may function as passive subtractors of tissue which lead to limited deficits or as active sources or foci of interference with the activities of the intact residuum. Such sources of active disturbance do not yield simple subtractive defects, but rather function to introduce more global or general eccentricities of behavioral organization. It appears from our analysis that it is the latter "active" consequence which is reflected as "organicity" on the Rorschach test. For purposes of emphasis the phenomena referred to have been dealt with in a categorical fashion. However, it is far more likely that a continuum of dysfunction exists, ranging from relatively pure subtractive disturbances to full-blown active reorganization of function.

A serious weakness in the present study is our lack of information concerning the explicit loci of the neurologic damages which were present in the population studied. It is clear that for the hypothesis advanced to be explicity tested it would be necessary to contrast the psychologic characteristic of groups of patients who were matched for locus and extent of injury but who differed in the physiclogic alterations which attended the damage. However, such data are not available to us and as a consequence all conclusions must be regarded as tentative and suggestive rather than as definitive. The results obtained, however, strongly suggest that more explicit investigations in which neural locus is better controlled, are both potentially productive and desirable.

SUMMARY

Ten hemiplegic patients were divided into two groups of five each on the basis of whether they exhibited Piotrowski's signs of organicity on the Rorschach test. On the basis of this dichotomy it was possible to predict features of the medical examination which are postulated to be consequences of "additive" neurophysiological disturbance including lability, disorientation, convulsion, etc. When a second group of ten hemiplegic patients was subdivided into two groups of five each on the basis of whether they showed evidence of "additive" or "subtractive" neurophysiological disturbance, it was possible to predict the presence of Piotrowski signs. The medical records and the Rorschach were in agreement in 18 of the 20

cases. The correlation between number of additive signs and Piotrowski signs was 77. Organicity can be considered to be a result of neurophysiologic rather than neuroanatomic disturbance. The contradictory results of psychologic testing can be explained on the basis of this hypothesis. Those Piotrowski signs which are not unique to the Rorschach test are most helpful.

REFERENCES

1. Aita, J. A., Reitan, R. M. & Ruth J. Psychiatric reactions in the late recovery period following brain injury. *Amer. J. Psychiat.*, 1947, *103*, 770-780.

2. Baker, G. Diagnosis of organic brain damage in the adult. In B. Klopfer (Ed.), Vol. 2, *Development in the Rorschach technique.* Yonkers on Hudson, N.Y. World Book, 1956, p. 828.

3. Birch, H. G. Problems in differential diagnosis of mental retardation in evaluation and treatment of the mentally retarded child in clinics, N.Y., Nat'l Assn. for Retarded Children, 1956, p. 40-46.

4. Birch, H. G. & Lee J. Cortical inhibition in expressive aphasia. *A.M.A. Arch. Neurol. Psychiat.*, 1955, *74*, 514-517.

5. Bruell, J. H. & Albee, G. W. Higher intellectual functions in a patient with hemispherectomy. Paper read at Amer. Psychol. Assn., N.Y.C., Sept., 1957.

6. Brussel, J. A., Grassi, J. R. & Melniker, A. The Rorschach method and post concussion syndrome. *Psychiat. Quart.*, 1942, *16*, 707-743.

7. Cherry, C. *Nature*, Nov. 1955.

8. Cohen, J. The factorial structure of the W A I S between early adulthood and old age. *J. consult. Psychol.*, 1957, *21*, 283-290.

9. Cooper, I. S. Clinical results and follow-up studies in a personal series of 300 operations for Parkinsonism. *J. Amer. Geriat. Soc.*, 1956, *4*, 1167-1171.

10. Dörken, H. & Kral, V. The psychological differentiation of organic brain lesions and their localization by means of the Rorschach test. *Amer. J. Psychiat.*, 1952, *108*, 764-770.

11. Fisher, J., Gonda, T. A. & Little, K. B. The Rorschach and central nervous system pathology, a cross validation study. *Amer. J. Psychiat.*, 1956, *111*, 487-492.

12. Goldstein, J. *The Organism.* New York: Amer. Book, 1939.

13. Gruen, A. A critique and re-evaluation of Witkin's perception perception-personality work. *J. gen. Psychol.*, 1957, *56*, 73-95.

14. Harrower-Erickson, M. Personality changes accompanying cerebral lesions: I. Rorschach studies of patients with cerebral tumors. *A.M.A. Arch. Neurol. Psychiat.*, 1940, *43*, 859-890.

15. Harrower-Erickson, M. Personality changes accompanying cerebral lesions: II. Rorschach studies of patients with focal epilepsy. *A.M.A. Arch. Neurol. Psychol.*, 1940, *43*, 1081-1118.

16. Hebb, D. O. Man's frontal lobes; a critical review. *A.M.A. Arch. Neurol. Psychiat.*, 1945, *54*, 10-24.

17. Hebb, D. O. *The organization of behavior.* New York: J. Wiley, 1949.

18. Hertz, M. R. & Loehrke, L. The application of the Piotrowski and the Highes signs of organic defect to a group of patients suffering from post-traumatic encephalopathy. *J. proj. Tech.*, 1954, *18*, 183-196.

19. Hirschstein R. & Rabin, A. I. Reactions to Rorschach cards IV and VII as a function of parental availability in childhood. *J. consult. Psychol.*, 1955, *19*, 473-475.

20. Hughes, R. M. A factor analysis of Rorschach diagnostic signs. *J. gen. Psychol.*, 1950, *43*, 85-103.

21. Hunt, T. The application of the Rorschach test and a word association test to patients undergoing prefrontal lobotomy. *Psychol. Bull.*, 1940, *37*, 546.

22. Ivanov-Smolensky, A. N. *Conditioned reflexes and the cerebral center.* Moscow: Medgiz, 1954.

23. Kisker, G. W. The Rorschach analysis of psychotics subjected to neuro-surgical interruption of the thalamo-cortical projections. *Psychiat. Q.*, 1944, *18*, 43-52.

24. Klebanoff, S. G., Singer, J. L. & Wilensky, H. Psychological consequences of brain lesions and ablations. *Psychol. Bull.* 1954, *51*, 1-41.

25. Koff, S. A. The Rorschach Test in differential diagnosis of cerebral concussion and psychoneurosis. *Bull. U. S. Army Med. Dept.*, 1946, *5*, 120-123.

26. Kral, V. A. & Dörken, H. Jr. Deterioration in dementia paralytica. *Amer. J. Psychiat.*, 1957, *109*, 614-692.

27. Kral, V. A. & Dörken, H. Jr. Comparative psychological study of hyperkinetic and akinetic extrapyramidal disorders. *A.M.A. Arch. Neurol. Psychiat.*, 1951, *66*, 431-442.

28. Kral, V. A. & Dörken, H. Jr. The influence of subarterial diencephalic brain lesions on emotionality as reflected in the Rorschach color responses. *Amer. J. Psychiat.*, 1951, *107*, 839-843.

29. Krech, D. Discussion: theory and reductionism. *Psychol. Rev.*, 1955, *62*, 229-232.

30. Krynauw, R. A. Infantile hemiplegia treated by removing one cerebral hemisphere. *J. Neurol., Neurosurg., Psychiat.*, 1950, *13*, 243.

31. Meer, B. & Singer, J. L. A note on the "Father" and "Mother" cards in the Rorschach inkblots. *J. consult. Psychol.*, 1950, *14*, 482-484.

32. Nadel, A. B. A qualitative analysis of behavior following cerebral lesions. *Arch. Psychol.*, 1938, *24*, 5-58.

33. Penfield, W. & Jasper, H. H. *Epilepsy and the functional anatomy of the human*

brain. Boston: Little, Brown, 1953.

34. Piotrowski, Z. The Rorschach inkblot method in organic disturbance of the central nervous system. *J. nerv. ment. Dis.*, 1937, *86*, 525-537.

35. Ranshoff, J. & Carter, S. Hemispherectomy in the treatment of convulsive seizures associated with infantile hemiplegia. In *Neurology and psychiatry in childhood*. Assn. Res. Nerv. Ment. Dis. *XXXIV* Baltimore: Williams Wilkins, 1954.

36. Reitan, R. M. Validity of Rorschach test as a measure of psychological effects of brain damage. *A.M.A. Arch. Neurol. Psychiat.*, 1955, *73*, 445-451.

37. Reitan, R. M. Intellectual and affective changes in essential hypertension. *Amer. J. Psychiat.*, 1954, *110*, 817-824.

38. Reitan, R. M. Intellectual functions in myxedema. *A.M.A. Arch. Neurol. Psychiat.*, 1953, *69*, 436-449.

39. Reitan, R. M. Intellectual functions in aphasic and non-aphasic brain injured subject. *Neurology*, 1953, *3*, 202-212.

40. Reitan, R. M. Intellectual and affective functions in chronic brucellosis. *Amer. J. Psychiat.*, 1953, *110*, 19-28.

41. Reitan, R. M. The performance of aphasic, non-aphasic and control subjects on the Rorschach test. *J. gen. Psychol.*, 1954, *51*, 199-212.

42. Rose, A. T. & Reitan, R. M. Intellectual and affective functions in multiple sclerosis. *A.M.A. Arch. Neurol. Psychiat.*, 1955, *73*, 663-677.

43. Van Monakow, C. *Gehirnpathologie*. Wien, (2nd Ed.) 1905.

44. Wade, Marjorie. Effect of sedatives upon delayed response in monkeys following removal of the prefrontal lobes. *J. Neurophysiol.*, 1947, *10*, 57-61.

45. Walton, B. On the validity of the Rorschach test in the diagnosis of intracranial pathology. *J. ment. Sci.*, 1955, *101*, 370-382.

46. Wittenborn, J. R. Level of mental health as a factor in the implications of Rorschach scores. *J. consult. Psychol.*, 1950. *14*, 469-472.

Received August 1, 1958
Revision received January 3, 1959

The Bender Visual Motor Gestalt Test As an Index of Emotional Disturbance in Children

AILEEN CLAWSON, PH.D.[1]
Wichita Guidance Center, Wichita, Kansas

The purpose of this study was to evaluate the clinical usefulness of the Bender Visual Motor Gestalt Test (BVMGT) as a projective technique for the personality appraisal of children. The BVMGT is frequently included in the standard battery of psychological tests administered to patients in hospitals and mental clinics. However, questions about the interpretive significance of the reproductions can receive only very limited and ill-defined answers from available literature about the test.

When the patient is an adult, the diagnostician may choose to score the deviations in order to obtain a summary score (4, 5, 12, 14); or he may apply interpretive hypotheses to the deviations either singly or in configurations. The scoring methods yield a gross diagnostic label which can be of use for research purposes, but which is of limited value in the clinic. Diagnosis for purposes of placement or treatment necessitates many things beyond the classification of "normal", "neurotic", or "psychotic".

A method of approach which involves interpretation of reproductions has more clinical usefulness providing, of course, that the interpretive hypotheses are valid. At present there is a single published paper about the diagnostic significance of BVMGT design deviations (9), and the hypotheses derived from this source are not accompanied by published experimental verification. Therefore the psychologist must base interpretations, for the most part, upon these unverified hypotheses or upon his educated guesses and his own accumulation of empirical evidence.

When the patient is a child or a defective adult, and the diagnostic question pertains to his maturation level, the psychologist can compare the figure reproductions with Lauretta Bender's original age scale (1, 2) and approximate the mental age of the individual. Evaluation of maturation is perhaps the best documented aspect of the test and the purpose for which it is most frequently used.

When, however, the diagnostic need is to understand childhood behavior problems, the clinician has no published source of interpretive hypotheses and only limited information about significant deviations. The only really comprehensive study of children's BVMGT productions is that of Byrd (6) who collected the records of 200 children ages 8 to 16 who had been diagnosed as needing psychotherapy. With these he compared the records of a similar age group of 200 children judged to be well-adjusted.

The variables which Byrd used for comparison of groups were 15 objectively defined test factors originally proposed by Hutt (9). Four of the variables differentiated the groups at all age levels, but the overlap was great; and the author cautioned against evaluation of a record on the basis of a sign approach alone. Byrd did not investigate the interpretation of differentiating variables.

This matter of diagnostic significance would appear to be the next step toward providing the child psychologist with a working body of knowledge about the BVMGT, and it is the purpose for which this study was designed.

HYPOTHESES

Following are the three general hypotheses and their detailed subparts tested in this study.

---

[1] This article is based on a doctoral dissertation completed at the University of Houston, Texas.

Hypothesis I. When measured quantitatively, the kinds and amount of deviation from the stimulus figures will be significantly greater in the reproductions of clinic cases than in those of non-clinic cases. The deviations analyzed in connection with this hypothesis were used in adult studies by Hutt (9), Billingslea (5), or Peek and Quast (14).

The method for evaluating the amount of deviation for each variable was operationally defined as follows:

A. *Arrangement of figures.*

1. Order of figures: The arrangement or sequential order of the stimulus figures as reproduced:
    a. Rigid: All figures drawn so as to follow a direct sequence on the page in either a horizontal or vertical direction. Placement of the drawings appear forced and without consideration for size or shape.
    b. Orderly: A regular succession of figures in either horizontal or vertical sequence with the exception that one inversion (change in direction) was permitted.
    c. Irregular: More than one change in direction may be evident; but the changes are logical, e.g. to allow more space for a figure.
    d. Confused: No more than three figures are drawn in direct sequence, and the remainder are scattered about the page.
    e. Confused order with Figure A in the middle and the others placed arbitrarily around it.
2. Page cohesion or organization: The general location of the reproduced figures on the page or pages.
    a. Edge tendency: Two-thirds of the figures on any one page are arranged along either vertical edge in such manner that the figures do not extend beyond the midline if the paper is in vertical position, or beyond one-third the paper width in horizontal position.
    b. Top tendency: Two-thirds or more of the figures are contained within the upper one-third of the page when the paper is in vertical position, or contained within the upper one-half of the page when oriented horizontally.
    c. Bottom tendency: Two-thirds of the figures are contained within the bottom one-third of the page when the paper is in vertical position, or contained within the lower one-half of a page oriented horizontally.

B. *Modification in size:* The increase or decrease in linear size of the figures from that of the standard stimuli.

1. Reduction: Figures measured with graph paper (10 units to 1 inch). A record is classified in this category if five or more figures show a decrease of either the vertical or horizontal axis by more than one-quarter of the axis of the stimulus figure.
2. Expansion: Figures measured as for Reduction. A record is classified in this category if five or more figures show increase of either the vertical or horizontal axis by more than one-quarter of the axis of the stimulus figure.
3. Progressive increase in figure size, or at least one very large figure.

C. *Use of white space.*

1. Collision: Any figure or part of a figure is superimposed upon another reproduction.
2. Multiple pages: The use of more than one page for the reproductions.
3. Paper in horizontal position.

D. *Modification of gestalt.*

1. Rotation: The revolving of the total figure on its axis in either clockwise or counterclockwise direction such that the angle subtended between the figure's horizontal axis and the horizontal edge of the paper is more than 15° greater than that in the standard stimulus figures.
2. Left-right displacement (Fig. 5, 6, 8): The shifting of the point of connection of subparts of a figure one-fourth inch or more from the

position on the stimulus figures.

3. Regression or lack of maturation. The use of less mature concepts in figure reproductions. The following deviation must be present in three or more units of the figure to be so classified:
   a. The use of circles for dots or loops (Fig. 1, 2, 3, 5).
   b. The use of dashes or commas for dots or loops (Fig. 1, 2, 3, 5).
   c. The use of dots for loops (Fig. 2).
   d. The replacing of loops or dots by scribbles (Fig. 1, 2, 3, 5).
   e. The use of arcs instead of clear cut angles in the columns of Fig. 3.
4. Modification of curvature:
   a. Uneven amplitude of the horizontal sine wave of Fig. 6.
   b. Squaring (Fig. A, 4, 5, 6): A change in curvature so that the arc takes on a flattened rectangular form. In Fig. 6 this shape must be present in three or more units.
   c. Pointing (Fig. A, 4, 5, 6): A change in curvature so that the arc takes on a sharpened triangular form. In Fig. 6 this shape must be present in three or more units.
   d. Scalloping (Fig. 6): Three or more units extend in a single direction from the base line.
   e. Change in curvature (Fig. A, 4, 5, 6): An increase or decrease in curvature beyond established limits in two or more figures. The following ratios were established as limits (6).

      Figure A increased if perpendicular radii were less than 8:10.

      Figure 4, base-altitude ratios 1:1 to 3:1.

      Figure 5, base-altitude ratios 1:1 to 9:5.

      Figure 6, base-altitude ratios horizontal curve 2:1 to 5:1; vertical curve 1.5:1 to 6:1.

      Graph paper ruled 10 units to the inch was used to measure the figures.
5. Change in angulation (Fig. A, 2, 3, 4, 5, 6, 7, 8): A change of greater than 15 degrees in the size of the angle of a figure or the angle of intersection between subparts of a figure. This factor was scored when four or more figures contained increased or decreased angulation.
6. Closure (Fig. A, 4, 5, 6, 7, 8): The reproduction without overlap of the connected contour of the whole figure or of any subpart.
   a. Separation: White space showing between the subparts.
   b. Gap: A break in a contour which is continuous in the stimulus figure.
   c. Runover: Extension of a line beyond the point of juncture.
   d. Dog ears: An unsuccessful attempt to draw an angle by an extension beyond the linear joint.
7. Overlap of subparts:
   a. Penetration (Fig. A, 4, 5, 8): The reproduction of one subpart upon another subpart where these parts merely touch in the stimulus.
   b. Absorption (Fig. A, 4, 7, 8): Subparts touching, but the apex of one subpart lacking because of intersection with the other part.
8. Figure limits (Fig. 1, 2, 3, 5, 6): Deviation in the number of units.
   a. Perseveration: Two or more units in excess of the stimulus.
   b. Truncation: Two or more units less than that of the stimulus.

E. *Work methods:*

1. Sketching: Formation of a line by repetitive strokes resulting in a fuzzy quality.
2. Workover: Going over a previously made line or dot.
3. Heavy pressure: Two-thirds or more of the figures drawn with 70% or more color as measured by comparison with a standard engraving chart of half-tone screen values. Number two lead pencils were used.
4. Directionality of lines (Oblique subpart of Fig. 4, 5, 6): Notation was made of whether the oblique part was drawn in a generally outward or inward direction relative to the subject's body.

5. Erasure: Number of figure reproductions to which an eraser has been applied.

Hypothesis II. Deviations from the stimulus figures can be related to childhood disturbances. The first six sub-hypotheses were taken from Hutt (9) and were given some extrapolation to fit the developmental behavior of children.

A. The expansive style of organization (with figures spread widely over one or more pages) is indicative of an expansive or manic mood. In childhood this will be expressed in acting out behavior.

B. The compressive style of organization (with figures placed compactly within a segment of one page) indicates a sense of personal inadequacy, depression and constriction. In childhood this will be expressed behaviorally by withdrawal.

C. An overall increase in size of figures is a reaction formation to anxiety. It indicates overcompensation in expansiveness of mood. In childhood this will be expressed in acting out behavior.

D. A decrease in the size of figures is related to constriction, rigidity and a strict super ego; it indicates active overt anxiety and fearfulness. In childhood this will be expressed behaviorally by withdrawal.

E. Decreased amplitude of sine curves is correlated with suppression of affect, an emotional blunting. In childhood this will be expressed by withdrawal.

F. Exaggeration of curvature or increased amplitude is related to expansiveness of mood and manic behavior. In childhood this will be expressed by acting out behavior.

G. Difficulty in learning to read is related to a disturbance in the perceptual process whereby the general form is correctly perceived, but the parts within the whole are misperceived. It is hypothesized that in the clinic group there is a relationship between the reproduction of an incorrect number of units in Figures 1, 2, 3, 5, 6 on the BVMGT and the presence of reading problems.

Hypothesis III. In the clinic group the patterns of BVMGT deviations can be related to Rorschach determinants and contents. The relationships sought between BVMGT and Rorschach in this study are to be empirically determined, because there are no specific relationships reported in the literature.

A. Several configurations of Rorschach determinants can be discerned in the protocols of disturbed children (17). Each configuration is related to a pattern of BVMGT deviations.

B. Closure difficulty is manifested by incorrect reproduction at the point of closing the contour of a subpart or joining two subparts of a design. Such difficulty is an indication of fearfulness in interpersonal relationships (9), and is related to fearsome or aggressive human content in the Rorschach protocol.

C. Progressive increase or extreme unevenness in figure size is indicative of low frustration tolerance, irritability, and explosiveness (9). Such unevenness of size is related to the tendency to produce relatively more explosive, aggressive content to the chromatic than to the achromatic Rorschach cards.

SUBJECTS AND PROCEDURE

The experimental group consisted of 80 clients of the Wichita Guidance Center, Wichita, Kansas. The group included 40 boys and 40 girls in the age range 7-0 to 12-0 years, none of whom were psychotic, mentally defective or known to have brain lesions at the time of testing. These children had a wide and inclusive range of presenting symptoms, all of which can be de-

TABLE I—BVMGT Factors of Hypothesis I Scored Present - Absent

Factor	School N=80	Clinic N=80	Chi square	P
Organization				
*Orderly arrangement	36	10	19.07	.001
*Confused arrangement	9	24	7.48	.01
"A" in middle	6	21	8.73	.01
Irregular arrangement	16	17	—	—
Rigid arrangement	19	30	2.94	.10
Bottom tendency	2	8	—	—
Edge tendency	10	12	—	—
Top tendency	9	14	—	—
Summary of compressed arrangement	21	34	3.98	.05
Modification of size				
*Change in size	19	42	14.01	.001
Unevenness in size	5	28	18.48	.001
Modification of Gestalt				
*Rotation	14	42	21.54	.001
*Change in angulation	29	61	26.00	.001
*Change in curvature	5	18	7.31	.01
Squaring	64	59	—	—
Pointing	57	41	—	—
Scalloping	2	6	—	—
Separation	24	38	5.16	.05
Penetration	34	37	—	—
Displacement	65	65	—	—
Absorption	16	20	—	—
Perseveration	45	44	—	—
Truncation	56	48	—	—
Runover lines	75	80	—	—
Dog ears	4	4	—	—
Work methods				
Workover	73	56	7.31	.01
Sketching	2	3	—	—
Heavy pressure	48	57	2.24	.10
Paper horizontal	4	12	—	—
Multiple pages	9	22	5.77	.02
Directionality: 4 curve inward	60%	59%	—	—
Directionality: 5 spike inward	44%	70%	5.18	.05
Directionality: 6 vertical inward	80%	70%	—	—

*Previously cited as a significant differentiating factor (6).

scribed clinically as maladjustive behavior associated with emotional disturbances.

In the clinic group were 28 children described as "acting out", 41 children labeled "withdrawn" and 31 whose case histories noted reading problems among the presenting symptoms. The children were not examined for reading skills.

The control group was composed of 80 children within the specified age range attending the Wichita Public Schools and judged by teachers to be normally developing children typical of the age group. They were selected from eight schools which formed a stratified random sample of the city's socioeconomic levels. Five boys and five girls were chosen from each of the eight schools, and the selection of a boy and girl from each age range was made on the basis of proximity to the midpoint of the age range.

Each of the clinic subjects was given an individual measure of intelligence (Binet or WISC), Rorschach, and BVMGT. Each school subject was asked to draw a Goodenough figure as well as the BVMGT designs. The Goodenough figure drawings yielded mental age scores with which some degree of control could be exerted over variables related to intellectual functioning. The school and clinic subjects were matched in age, sex, I.Q., and socioeconomic status in groups rather than individually.

RESULTS AND DISCUSSION

Data pertaining to Hypothesis I are presented in Table I and Table II. Nine single and four summary factors out of 37 were found to yield chi square values significant at or beyond the .01 level. Seven of these factors had previously been shown by Byrd (6) to differentiate children needing therapy from well adjusted children. Verification of his findings supports the hypothesis that certain factors of the BVMGT are valid indices for evaluating personality adjustment.

Three sub hypotheses of Hypothesis II were confirmed at or beyond the .01 level, one was significant at the .05 level, and three were untestable because the N was too small. Table III gives specific data. Three comparisons in Hypothesis III yielded significance at the criterion level. They are presented in Table IV.

A total of 48 chi squares was calculated, 19 of which were significant at the .01 level. According to a suggested method for evaluating a series of statistical tests (15), the chance probability of obtaining this number of significant statistics is less than .001.

In the following paragraphs the results are discussed in each of four general groups of factors.

Organizational factors

Sequence. Five organizational factors were found to distinguish the

TABLE II—BVMGT Factors of Hypothesis I Differentiating School and Clinic Groups at or Beyond .01 Level of Confidence When Scored by Frequency of Appearance

Factor	Mdn. number of figures in which error appears	N above Mdn.		Chi square	p
		School (N=80)	Clinic (N=80)		
Regression	2	23	57	28.90	.001
*Closure	2	29	51	12.07	.001
Joining	3	28	52	14.40	.001
Erasure	3	49	31	8.10	.01

* Previously cited as a significant differentiating factor (6).

TABLE III—Comparison of Certain Behavioral Symptoms in the Clinic Cases With Respect to BVMGT Deviations

Behavior	BVMGT Factor	Chi square	p
Acting out	Expansive organization	15.00	<.001
Withdrawn	Compressed organization	6.12	<.05
Acting out	Increased figure size	—	—
Withdrawn	Decreased figure size	7.26	<.01
Acting out	Increased curvature	—	—
Withdrawn	Decreased curvature	—	—
Reading problems	Incorrect number of units	7.10	<.01
Acting out	Horizontal page Circular organization Uneven size	10.79	<.001

TABLE IV—Comparison of Rorschach Factors in Clinic Cases with Respect to BVMGT Deviations

Rorschach	BVMGT Factor	Chi square	p
Constricted	Constricted figure size	11.27	<.001
Interpersonal Aggression	Joining Trouble	8.06	<.01
Aggressive Responses	Uneven Figure Size	10.59	<.01

school and clinic groups. Two such factors pertained to the sequence of figures on the page. An orderly succession was typical of the records of well adjusted children, while the preponderance of chaotic succession was produced by the maladjusted. It seems reasonable to hypothesize that the disruptive factors involved in emotional disturbances result in unusual patterns of organization ranging from very compulsive, rigid arrangements to successions which are characterized by a jumbled, confused order.

Use of white space. Persons who spread figures widely on the page were described by Hutt as aggressive, rebellious individuals; and those who compress the figures into a small portion of the page were said to have withdrawn from a world which, to them, appeared menacing and hostile (9). In the present study both facets of the size variable showed significance with the respective behaviors, and Hutt's hypotheses were supported with this sample of children. It may be concluded, therefore, that an expansive arrangement of BVMGT figures has diagnostic significance as an indicator of a personality which expresses itself in acting out behavior, and compressed figures reflect a personality which tends to withdraw.

Change in Size

The factor of general change in size differentiated the groups significantly. The size change was principally that of decrease, and an hypothesized relationship between decreased figure size and withdrawn behavior found statistical support.

Small figure size was found to be associated with a pattern of Rorschach determinants which includes (1) $F\% > 50$; (2) no other single determinant $> 2\frac{1}{2}$; and (3) sum $C < 3$ (17). This configuration is a generally accepted indicator of an over controlled personality with inadequate channels of expression.

Among the clinic a peculiar type of BVMGT record was noted, in which figure size was uneven, either with progressive change in size or punctuated with one or more outsize figures. Hutt considered this to be good evidence of low frustration tolerance and behavioral symptoms such as irritability, explosiveness, and acting out. In the present study not all acting out children drew their figures in uneven sizes, but this pattern was one of three types of phenomena which were found in 75% of the records of acting out children. Exploring further the idea of low frustration tolerance and ease with which these children might respond, the investigator found relatively more explosive reaction to Rorschach color cards than to achromatic ones. In other words, responsiveness to stimulation from without was quantatively greater in those cases where BVMGT figures were markedly inconsistant in size.

It is believed that the relationships obtained in this clinic sample support the statement that figure size and control of affect are related in the case of disturbed children. Controlled or constricted affect accompanies constricted figure size, and uncontrolled affect is related to uneven figure size.

Changes in form

The third category of deviations includes those which in some way alter the pattern of the design.

Closure. Difficulty with joining the ends of contour lines was significantly more frequent in the clinic group, a finding consistent with those of Byrd and Hutt. Hutt believed that closure difficulty is related to fearfulness in interpersonal relationships.

Trauma in interpersonal relationships leads to emotional disturbance which may be manifested behaviorally in different ways. It was hypothesized that if these interpersonal problems are still expressed in the main behavioral symptom pattern, such symptoms will be reflected, as Hutt described, in closure-joining difficulty on the BVMGT. Similarly, the interpersonal conflict would appear in Rorschach content as aggressive M. The two tests showed the predicted relationship; but the interpretive significance of aggressive M has not been established.

Regression. Although regression to simpler form was found in the majority of records in both groups, the clinic group showed significantly more such signs per record than did the school group. No satisfactory way was found to assess the diagnostic significance of this variable. A study of regressive signs is complicated by the fact that remnants of more primitive stages of perceptual motor development may continue into later stages. The so-called regressive signs in such instances are evidence of lag in maturation rather than reversion to earlier modes of behavior. It would appear that judgment of regression is warranted only if there is evidence of more mature forms in the BVMGT record.

Rotation. School and clinic children made about the same amount of severe rotation (90° to 180°) ; but when all figures with change of axis $\geqq = 15°$ were counted as "rotated", the sign became a significant differentiating factor. It would appear that small rotations have greater diagnostic value, but no hypothesis was formulated.

Change in angulation. This factor successfully discriminated the clinic from the school group at a high level of significance as Byrd found. No interpretive hypothesis was formulated.

Change in curvature. Hutt considered the curved line figure to be an emotional stimulus for the perceiver; and he interpreted increased curvature as over response and decreased curvature as suppression of affect.

In the present study significantly more clinic children drew the curved line of figures out of proportion. It was noted that in each instance the deviation was in the direction of increased curvature, yet the number of such records was about equally divided between the acting out and withdrawn categories. The numbers were too small to treat statistically, but the findings, while supporting change in curvature as a sign of emotional disturbance did not differentiate the disturbance in the direction Hutt postulated.

Incorrect number of units. One type of distortion observed in the BVMGT productions of clinic cases with reading difficulties, involved a change in the number of units comprising the whole. Statistical support for a hypothesis of relatedness of incorrect number of units to reading difficulty comes from analysis of the data, but the diagnostic significance of such behavior is still speculative.

Pascal and Suttell gave very high negative scoring to incorrect number of units, thus indicating their judgment of the pathognomonic nature of the distortion in adult records. It is possible that this is one factor which involves perceptual learning and has different significance for different age groups.

Work Methods

Direction of drawing. Directionality was investigated in this study because it has been reported as diagnostically significant by Hutt and by Peek. With reference to unpublished findings, Hutt stated that the direction of drawing from the exterior toward the internal part of the design was associated with egocentric personalities (9). Peek substantiated this statement with a study of directionality of the "spike" in BVMGT Figure 5 as drawn by a sample of veterans (13).

In the present study direction of drawing the "spike" in Figure 5 was found to differentiate the clinic from the school group at the .05 level. Hence there is a tendency for drawing to be made outward by well adjusted children and inward by emotionally disturbed children.

Three factors were found more frequently on the school records than on the records of clinic children: Orderly succession; Erasure; and Workover. The first of these was discussed in an earlier paragraph.

Erasure. While 80% of children in the samples used an eraser at some point in their drawings, significantly more school records had erasures in excess of the median.

There are at least two alternative explanations for the frequent erasure of school children. One is the possibility that the sample of school children had well balanced personalities without emotional disturbance and therefore were able to express freely the childhood need to please adults and conform to requests. They took special care to correct deviations of which they were aware. The clinic cases were disturbed children who had perhaps given up trying to please anyone. They were frequently observed in the clinic making their drawings hastily, with some such remark as, "I can't draw good". Self concept and motivation seemed equally low.

Another possibility, and one somewhat akin to the first, is that the school children were less constricted and more spontaneous. Perhaps they felt freer to alter the situation.

Workover. These same possibilities may be equally reasonable when considering the factor of workover. Lines and dots were given additional attention more often by the school children.

SUMMARY

The results of this study reveal the presence of meaningful diagnostic signs in children's BVMGT records beyond a simple ability to reproduce designs of differing complexity. Of the 13 variables which differentiated the two groups significantly, the data supported five hypotheses of interpretive significance and demonstrated three significant relationships between the BVMGT and the Rorschach. It is believed that Hutt's hypotheses about the significance of deviations with adults have been established, in part, with children.

REFERENCES

1. Bender, Lauretta. A Visual-Motor Gestalt Test and its clinical use. *Res. Monogr.,* Amer. Orthopsychiat. Assn., No. 3, 1938.

2. Bender, Lauretta. Manual for instruction and test cards for Visual-Motor Gestalt Test. Amer. Orthopsychiat. Assn., 1946.

3. Bender, Lauretta. *Child psychiatric techniques.* Chicago: Thomas, 1952.

4. Billingslea, F. Y. The Bender-Gestalt: An objective scoring method and validating results. *Amer. Psychologist,* 1946, *1,* 286.

5. Billingslea, F. Y. The Bender Gestalt: An objective scoring method and validating data. *J. clin. Psychol.,* 1948, *4,* 1-27.

6. Byrd, E. The clinical validity of the Bender Gestalt Test with children: A developmental comparison of children in need of psycho-therapy and children judged well-adjusted. *J. proj. Tech.,* 1956, *20,* 127-136.

7. Goodenough, Florence. *The measuring of intelligence by drawings.* Yonkers: World Book, 1926.

8. Guilford, J. P. *Fundamental statistics in psychology and education.* New York: McGraw-Hill, 1950.

9. Hutt, M. L. Revised Bender Visual-Motor Gestalt Test. In A. Weider (Ed.), *Contributions toward medical psychology.* New York: Ronald Press, 1950.

10. Klopfer, B., Ainsworth, Mary, Klopfer, W. G., & Holt, R. R. *Developments in the Rorschach technique.* Vol. 1. New York: World Book, 1954.

11. Machover, Karen. *Personality projection in the drawing of the human figure.* Springfield: Thomas, 1949.

12. Pascal, G. R., & Suttell, Barbara. *The Bender-Gestalt Test.* New York: Grune & Stratton, 1951.

13. Peek, R. M. Directionality of lines in the Bender-Gestalt Test. *J. consult. Psychol.,* 1953, *3,* 213-216.

14. Peek, R. M., & Quast, W. *A scoring system for the Bender-Gestalt Test.* Hastings, Minnesota, 1951.

15. Sakoda, J. M., Cohen, B. H., & Beall, G. Test of significance for a series of statistical tests. *Psychol. Bull.,* 1954, *51,* 172-175.

16. Terman, L. M., & Merrill, Maud. *Measuring intelligence.* New York: Houghton Mifflin, 1937.

17. Vorhaus, Pauline G. Rorschach configurations associated with reading disability. *J. proj. Tech.,* 1952, *16,* 3-19.

18. Wechsler, D. *Wechsler intelligence scale for children.* New York: Psychological Corp., 1949.

Received July 21, 1958
Revision received December 15, 1958

The Influences of Color, Shading, and Welsh Anxiety Level on Elizur Rorschach Content Test Analyses of Anxiety and Hostility[1]

RALPH P. FORSYTH
University of North Carolina

A paper by Baughman (2) has cited empirical support for concluding that there is considerable consistency of behavior in the formal scoring properties of the Rorschach despite quite drastic changes in the stimulus dimensions. This study is designed to test another aspect of this hypothesis: to see if this consistency will also appear, despite experimental changing of the stimulus dimensions, when a Rorschach content analysis of anxiety and hostility is used.

This research represents an attempt to assess the role and possible interaction of two variables: anxiety level, as defined by the Welsh A scale (7), and two specific Rorschach stimulus dimensions, color and shading. The dependent variables are anxiety and hostility scores as measured by Elizur's Rorschach Content Test (RCT) (3). The effects of color will be studied by an analysis of differences in group RCT scores between a standard card series (Chr) and an achromatic series (Achr). Similarly, differences between series Achr and a silhouette series (Sil) will indicate shading effects. Differences between the Chr and Sil series will reflect the combined effects of color and shading. The composition and properties of the two experimental card series, Achr and Sil, are discussed more fully by Baughman (1).

The following predictions were made:

1. There will be no significant differences in the Elizur RCT measurements of anxiety (Elizur A) or hostility (Elizur H) between the groups differing in the three series of Rorschach stimuli (Chr, Achr, or Sil) received. Further, no interaction with anxiety level is expected. (This prediction indicates that the data will not permit rejection of the null hypothesis.)
2. There will be real differences in amounts of Elizur A and Elizur H elicited by individual Rorschach cards within each card series.
3. There will be a significantly positive correlation between Welsh A and Elizur A scores.

SUBJECTS AND PROCEDURE

A 173 item abbreviated form of the Minnesota Multiphasic Personality Inventory (MMPI), which included scale K, Welsh A, Welsh R, and Taylor A, was administered to 325 male undergraduates enrolled in the introductory psychology courses at the University of North Carolina. The protocols were scored for Welsh A, from which the anxiety groups were selected. The distribution of Welsh A scores for this entire group was positively skewed, ranging from 0 to 35 with a median score of 10.75, a mean of 12.46 and a standard deviation of 7.6.

The three anxiety groups (total N=90) were selected from this population: the low anxiety (Welsh LA) group had percentile scores of 10-20 (raw scores of 3, 4, and 5), the middle anxiety (Welsh MA) group had percentile scores of 45-55 (raw scores of 10, 11, or 12), and the high anxiety (Welsh HA) group had percentile scores of 80-90 (raw scores of 19, 20, 21, or 22). The distribution extremes were avoided on the hunch that the

---

[1] Based upon a thesis submitted to the Department of Psychology, University of North Carolina, in partial fulfillment of the requirements for the M.A. degree. The author is indebted to the members of his committee, E. Earl Baughman (chairman), W. Grant Dahlstrom, and Mary G. Clarke, for their guidance.

Ss within this range might be atypical in a number of respects not pertinent to the experiment.

No individuals were used as Ss if their MMPI K scale was over 23, this being a t score of 70 on the MMPI standardization group. Several such potential Ss had to be eliminated; they were all from the Welsh LA subject pool.

The 90 male Ss (30 at each of the three Welsh anxiety levels), selected on the basis of their Welsh A and K scale scores, were asked to participate in an experiment involving "perception". These Ss were informed that they had been randomly selected from their classes, and it seems unlikely that any of them were aware of any preselection criteria. None of the Ss admitted to having seen the Rorschach previously.

The examiner (a male second year graduate student) administered the free association part of the Rorschach to each S individually in one of two similar testing rooms. Thirty Ss (10 from each anxiety level) responded to the Chr series; similarly 30 more responded to the Achr series, and the remaining 30 to the Sil series. In this way, nine groups were formed with 10 Ss in each group.

Series Chr is the standard Rorschach card series, while series Achr is a photographic reproduction, in black and white, of series Chr, with closely similar light values. The five achromatic cards in the Chr series were used as the corresponding cards in the Achr series, so that only the five colored cards (II, III, VIII, IX, and X) actually differed between the two series. Series Sil was constructed by placing a solid coat of black india ink over all the shaded and colored areas of the regular Rorschach blots, forming solid black designs. These blots were photographed and mounted on comparable Rorschach cards, resulting in a series of solid black designs with similar shapes to the Chr and Achr series, but without differential light values and with a very marked figure-ground contrast.

Each S was asked to give four responses to each of the 10 Rorschach cards he saw, making a total of 40 responses per S and 400 responses for each of the nine groups. After the responses were scored for Elizur A and Elizur H, the scores for the four responses that each S gave to each of the 10 Rorschach cards were combined so that each S had one Elizur A and one Elizur H score on each card. Lindquist (6) designates this 3 x 3 x 10 triple classification with 10 scores per cell a type III analysis of variance design, in that each S is classified in a particular anxiety level-card series group while all Ss, regardless of their grouping, respond to the same third variable, the 10 Rorschach cards, in the same sequence.

RESULTS

In respect to scorer reliability of the RCT measures, two judges (wives of graduate students) independently scored 30 protocols each after intensive training with the examiner. Judge A, rescoring the 30 protocols of the Chr group, obtained a Pearson product moment correlation of .90 for Elizur A and .94 for Elizur H with the examiner's scoring. Judge B, rescoring the 30 series Achr protocols, obtained Pearson correlations of .95 for Elizur A and .91 for Elizur H. The examiner rescored series Sil about a month after the original scoring and obtained Pearson correlations of .98 and .99 for Elizur A and H respectively with his previous scoring.

Table I shows a matrix of Pearson product moment correlations between the MMPI and RCT variables. These data are based on the 90 Ss participating in the study. No MMPI variable related significantly with either RCT measure.

Correlations were also computed separately for each of the three card series and three anxiety level groups for these variables, each of these groups consisting of 30 Ss. Some of these variables were significantly related within a particular subgroup,

TABLE I—Pearson Product Moment Correlations Between Variables for All 90 Subjects

	Taylor A	Elizur H	Elizur A	Welsh R	Welsh A
K	−.62**	−.02	−.06	.21*	−.73**
Taylor A		−.06	.00	−.09	.86**
Elizur H			.47**	−.03	−.05
Elizur A				.04	.03
Welsh R					−.05

* Significant at .05 level
** Significant at .01 level

but not within the total group, as shown by Table I. For example, in the Sil group K and Elizur A correlated −.38, significant at the .05 level. In the Welsh HA group Taylor A and Elizur H correlated −.37, which was both significantly different (at the .05 level) from zero and from the Welsh MA group, where r=.22.

K also apparently played a differential role for the Welsh MA and Welsh LA groups in the production of Elizur A and H. In the K-Elizur A relationship the Welsh MA group (r = −.43) was significantly different at the .05 level from the Welsh LA group (r=.34). Similarly, in the K-Elizur H relationship, although no one subgroup was found to be significantly different from zero, the Welsh MA group (r = −.27) and Welsh LA group (r=.29) differed at the .05 level.

THE RCT ANALYSES OF VARIANCE

Table II summarizes the results of six analyses of variance, three for Elizur A and three for Elizur H. These analyses were done on log transformed data since there were highly significant relationships between cell means and variances of the original data. Separate analyses were done for the colored (Cards II, III, VIII, IX, and X) and non-colored (Cards I, IV, V, VI, and VII), as well as for all 10 cards together, for both Elizur A and H because the five non-colored cards were identical in series Achr and Chr. A nonsignificant difference between these series might be an artifact of this similarity.

Table II shows that, considering all 10 Rorschach cards together, only the individual cards themselves are a significant source of variation, both for Elizur A and H. Table III shows the Elizur A means for the 10 Rorschach cards in each card series; Table IV shows the Elizur H mean scores for the 10 Rorschach cards in each card series.

The further analyses of the data, which broke the cards down into the colored and non-colored cards, complicated the picture considerably and

TABLE II—Significant Probability Levels for Elizur A and H Under the 3 Anxiety Levels, 3 Card Series, and Rorschach Cards

Source	*All 10 Cards*		*5 Colored Cards*		*5 Non-colored*	
	Elizur A	Elizur H	Elizur A	Elizur H	Elizur A	Elizur H
Rorschach Cards	P<.001	P<.01	P<.10	P<.01	P<.001	
Card Series					P<.01	
Welsh Anxiety Level						
Rorschach Cards X Card Series						
Rorschach Cards X Welsh Anxiety Level			P<.001			P<.05
Rorschach Cards X Card Series X Welsh Anxiety Level						

TABLE III—Elizur A Means for the 10 Rorschach Cards in Each Card Series

	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
Chr	.45	.32	.30	.43	.37	.32	.29	.34	.38	.34	.35
Achr	.49	.29	.30	.32	.28	.26	.26	.35	.36	.36	.33
Sil	.42	.30	.26	.26	.37	.21	.20	.30	.44	.36	.31
Total	.45	.31	.29	.335	.339	.26	.25	.333	.39	.35	.33

TABLE IV—Elizur H Means for the 10 Rorschach Cards in Each Card Series

	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
Chr	.26	.36	.32	.31	.34	.38	.32	.32	.40	.30	.33
Achr	.34	.43	.29	.32	.36	.30	.34	.37	.46	.31	.35
Sil	.28	.34	.33	.36	.36	.36	.24	.31	.44	.34	.34
Total	.29	.38	.31	.33	.36	.35	.30	.33	.43	.31	.34

indicated there may well have been subtle influences of the color, shading, and anxiety level on the RCT variables. The analyses showed that some interactions appeared in these further breakdowns that affected the colored or non-colored cards differentially, but did not hold up for all 10 cards together.

In the separate analysis of the five colored cards for Elizur A the interaction between card series and anxiety levels was significant at the .001 level. In this interaction it is apparent that the Welsh MA group is contributing most of the variance, being low on the Chr series, but quite high on the Achr and Sil series. Table V shows the mean Elizur A scores for all 10 Rorschach cards, the five colored, and the five non-colored cards in each of the nine experimental groups.

In the analysis of the non-colored cards, there was also a significant difference between card series. The means for the non-colored Rorschach cards can be seen in Table III; the total means for the non-colored card series can be seen in Table V. The difference between the Chr and the Achr series appeared in the non-colored cards despite the fact that the non-colored cards are identical in these two series.

It was apparent that the experimental groups were not equated on a hostility measure, and, therefore, a comparison between the card series groups is not warranted. For example, on Card I which is identical on the Chr and Achr series, the mean Elizur H score of the Welsh HA-Chr group was .13, while the mean of the Welsh HA-Achr group was .30.

DISCUSSION

Two of the three predictions were confirmed by the analyses of variance if the 10 Rorschach cards are considered together. In this way the data support prediction one and the formulation concerning the minimal effects

TABLE V—Mean Elizur A Scores in the Nine Subgroups

		Card Series			
		Chr	Achr	Sil	*Total*
Welsh HA	All 10 Cards	.36	.32	.32	.33
	Colored Cards	.37	.31	.31	.33
	Non-colored Cards	.36	.32	.33	.34
Welsh MA	All 10 Cards	.31	.35	.33	.33
	Colored Cards	.26	.40	.37	.34
	Non-colored Cards	.36	.31	.28	.32
Welsh LA	All 10 Cards	.39	.31	.28	.33
	Colored Cards	.38	.29	.31	.33
	Non-colored Cards	.40	.34	.26	.33
Total	All 10 Cards	.35	.33	.31	.33
	Colored Cards	.34	.33	.33	.33
	Non-colored Cards	.37	.32	.29	.33

of color and shading in affecting response behavior.

Prediction two was also confirmed; the 10 Rorschach cards, considered together, differed significantly in the amounts of Elizur A and H elicited. Although these results must be considered with caution due to the confounding effects of the stabilized card order, the data may be interpreted in support of Baughman's hypothesis concerning the importance of geometrical form and figure-ground dimensions of the stimuli in determining responses.

There was no relationship found between either of the MMPI anxiety measures and either RCT score; this refuted prediction three and warns psychologists not to equate the anxiety measures derived from the two tests. The differences between the anxiety measures from the two tests should be emphasized; the Welsh A scale is composed of MMPI items which have been found to empirically differentiate criterion groups, while the RCT appears to reflect a readiness to verbalize perceptions that are judged to be of anxious or hostile content.

Similarly, the failure of Taylor A to correlate significantly with Elizur A contradicts the earlier work of Goodstein (4). However, several differences in design may have been responsible for the failure of this study to replicate Goodstein's data, besides the possibility that Elizur A scoring may not have been comparable between the two studies. Goodstein administered the Rorschach to his Ss in group form and used a statistical technique (partial correlation) to control the effects of the number of responses given.

The further analyses, which broke the Rorschach cards into the colored and non-colored cards, indicated the possibility that there were some differential color effects within the 10 Rorschach cards. For example, real differences in Elizur A appeared between card series with the non-colored cards, but not for the colored cards or all 10 Rorschach cards. Since, as previously noted, the five non-colored cards are the same in both the Chr and Achr series, this difference in Elizur A (between the Chr and Achr series) must in some way be related to the colored cards II and III which do change between series Chr and Achr. One possibility is that the sudden introduction of blood-red color in the series Chr cards caused feelings of anxiety which were released only on the non-colored cards. This possibility, of course, did not exist on the Achr series where the means for the colored and non-colored cards were very similar. A further analysis also indicated similar (non-significant) amounts of Elizur A were produced on each colored Rorschach card, while the non-colored cards produced significantly different amounts. The expression of Elizur A, then, although apparently facilitated by the color was most differentially measured by the non-colored cards.

The Elizur A data for each Rorschach card in each of the card series supports the above interpretation. Table III shows that Rorschach card I, which was always presented first, increased slightly from the Chr to the Achr series. The decrease from the Chr to the Achr series became less pronounced the further the cards were, in sequence, from the colored cards II and III; the decrease being greatest on card IV and then progressively less on V, VI, and VII. If series Achr is used as a comparison baseline in evaluating the effect of the color it seems as if the red on cards II and III produced an outburst of Elizur A responses on card IV and then a general recovery until there was only a slight effect left on card VII. Again on the last three cards, which are colored in the Chr series, there was little difference between the Achr and Chr series. It appears, then, color has made a real difference in the production of Elizur A in this group of subjects, although the difference is not seen in the direct comparison of the colored cards in the Chr and Achr series, but in the comparisons of the non-colored cards between the Chr and Achr series.

While the effects of color and shading did not seem to influence the production of Elizur A on the colored cards per se, there was a very significant interaction of Elizur A scores between anxiety level and card series. The Welsh HA and Welsh LA groups had similar patterns; in both cases the Chr series Elizur A means were much higher than the Achr or Sil series (see Table V). This trend was reversed in the Welsh MA group, the mean scores in series Chr being lower than either the Achr or Sil series. The Welsh MA-Chr group produced the lowest Elizur A scores in all nine experimental groups on the colored cards, while Welsh MA-Achr and Welsh MA-Sil were the two highest on the colored cards.

Again by using the Achr series as a comparison baseline for evaluation, the color seemed to differentially inhibit the Welsh MA group in expressing Elizur A. On the other hand, the Welsh MA group produced significantly more Elizur A than the other two anxiety groups on the Achr and Sil series. Both the Welsh HA and Welsh LA groups expressed more Elizur A on the Chr series (both on the colored and non-colored cards) than on the Achr or Sil series. In this study the Welsh MA group reacted as Levy and Kurz (5) might predict a Welsh HA group should, in that the color differentially seemed more connotatively important to them.

SUMMARY

This study investigated the effects of color, shading, and anxiety level on the production of anxious and hostile content on the Rorschach test, as measured by Elizur's Rorschach Content Test. Ninety males were selected from 325 male undergraduates on the basis of their Welsh A scores, an anxiety scale from the Minnesota Multiphasic Personality Inventory (MMPI). Thirty of these Ss were a high anxiety group (Welsh HA), 30 a middle anxiety group (Welsh MA), and the remaining 30 a low anxiety group (Welsh LA). Ten of the Ss from each anxiety level were given the free association part of the Rorschach with the standard chromatic series (Chr), 10 with an achromatic series (Achr), and 10 with a silhouette series (Sil). This made a total of nine experimental groups, each of which had 10 Ss.

Results were as follows:

1. Considering all 10 Rorschach cards together, Elizur A (anxiety) and H (hostility) scores were not influenced by the presence or absence of color or shading. However, further analyses indicated that color did facilitate the production of Elizur A scores when comparisons of the non-colored cards (I, IV, V, VI, VII) were made between the Chr and Achr series.

2. There were real differences in Elizur A and H between the Rorschach cards. Although these results were confounded with the fixed presentation order, the data suggest the importance of geometrical form and figure-ground dimensions of the stimuli in determining responses.

3. No significant correlations were found between the Elizur A scores and either the Welsh A or Taylor A scores. These results warn psychologists not to equate the anxiety measures derived from the two tests.

4. Correlational results indicated the MMPI variable K interacted with Welsh A in the production of Elizur A and H for the 30 Ss in the Welsh MA, Welsh LA, and Sil groups. There were negative relationships between K and Elizur A and H in the Welsh MA and Sil groups, positive in the Welsh LA group.

REFERENCES

1. Baughman, E.E. A comparative analysis of Rorschach forms with altered stimulus characteristics. *J. proj. Tech.*, 1954, *18*, 151-164.

2. Baughman, E. E. The role of the stimulus in Rorschach responses. *Psychol. Bull.* 1958, 55, 121-147.

3. Elizur, A. Content analysis of the Rorschach with regard to anxiety and hostility. *J. proj. Tech.*, 1949, *13*, 247-284.

4. Goodstein, L. D. Interrelationships among

several measures of anxiety and hostility. *J. consult. Psychol.*, 1954, *18*, 35-39.

5. Levy, H. L., & Kurz, R. B. The connotative impact of color on the Rorschach and its relation to manifest anxiety. *J. Pers.*, 1957, *25*, 617-625.

6. Lindquist, E. F. *Design and analysis of experiments in psychology and education.* Boston: Houghton Mifflin Co., 1953.

7. Welsh, G. S. Factor dimensions A and R. In G. S. Welsh & W. G. Dahlstrom (Eds.), *Basic readings on the MMPI in psychology and medicine.* Minneapolis: University of Minnesota Press, 1956, pp. 264-281.

Received September 9, 1958
Revision received December 15, 1958

Rorschach Schizophrenic Score (RSS)[1]

YASUFUMI KATAGUCHI[2]
National Institute of Mental Health, Japan

INTRODUCTION

The Ishihara test is applicable to color blindness, and intelligence tests to mental deficiency, each having diagnostic effectiveness. Our concern is with the lack of an equally specific test for the diagnosis of schizophrenia. Though the Rorschach seems to be most effective among psychological tests for the diagnosis of this condition, even this test can not be thought of as a conclusive method. The author, however, believes that the Rorschach can be made a more effective instrument for the diagnosis of schizophrenia by improving the analysis of test protocols. Research on schizophrenia by this method, initiated by Rorschach (16), has continued over thirty years. As the history of the research in this period is described in detail by Klopfer & Kelley (8), and later developments have been referred to in the author's textbook (6), the historical description will not be repeated here.

The difficulty we must first face in research on schizophrenia by means of the Rorschach is the obscurity of definitions of schizophrenia. The second difficulty is the problem of sub-type classification. These have been pointed out by Kendig (7) and we, also, have met the same difficulties. Since we have no way of settling these problems at present, we have decided to take the presently popular psychiatric view. Despite some differences in the conception of schizophrenia, and disregarding the problem of sub-type classification, it is, fortunately, a fact that certain common characteristics are found in some of the Rorschach protocols of patients diagnosed definitely as schizophrenia.

As Piotrowski (11) has mentioned, the methods of analysis of the protocol may be classified into three groups; "pathognomonic", "tabular", and "systematic". The "systematic" diagnosis which he thought best is complicated and contains procedural difficulties that preclude general application.

First we examined the general Rorschach signs, and next the form-level rating supplemented by Friedman's (4) ideas; further we adapted Bühler's "Basic Rorschach Score" (3), and finally Watkins & Stauffacher's "Indices of Pathological Thinking" (19). Thus we intended to employ a many-sided approach to schizophrenia through a synthetic adaption of several methods which are amenable to quantitative analysis. Taking into account that the differential diagnosis between schizophrenia and psychoneurosis is often debatable clinically, we considered comparisons between these two groups in relation to normal adults. Here we assume a hypothesis of lower degrees of personality adjustment from normal to psychoneurosis to schizophrenia. Accordingly, the *Rorschach Schizophrenic Score* (RSS) that we are investigating here will be of use both for the purpose of differentiating between schizophrenia and psychoneurosis, and between schizophrenia and adult normal.

The purpose of our research is to discover a RSS by extensively re-examining the various Rorschach indices which have been regarded as characterizing schizophrenia and by synthetically treating the several indices which have been found to be effective in diagnosing schizophrenia.

---

[1] This paper is published by courtesy of Japanese Psychological Association with some revision. The author wishes to express his appreciation to Dr. Bertram R. Forer and Mr. Hiroshi Namiki for their help in translating it into English. The assistance of Mrs. Hisako Dendo and Miss Nobuko Takayanagi is also gratefully acknowledged.

[2] Research psychologist, Department of Psychology, National Institute of Mental Health, Chiba, Japan.

METHOD

Subjects: The subjects consisted of three groups; 30 schizophrenics, 30 psychoneurotics and 30 normal adults. Characteristics of each group are as follows:

1) Schizophrenic Group (SGr.)

The members of this group were patients of the Psychiatric Department of Konodai National Hospital, and were diagnosed as schizophrenia by more than two psychiatrists. Their terms of hospitalization ranged from four months to three years. All were chronic schizophrenics. Cases of mental deficiency or organic brain damage were excluded. We did not select samples on the basis of the Rorschach, except for excluding cases with fewer than 10 responses.

2) Psychoneurotic Group (PGr.)

This group consisted of psychoneurotic patients who had visited the National Institute of Mental Health. They were selected to be nearly comparable to SGr. in age, educational level, socio-economic level, and so on. This group consisted of eight anxiety neurotics, three hysterics, five obsessive-compulsive neurotics, six neurasthenics, and eight neurotics of mixed type.

3) Normal Group (NGr.)

The subjects of this group were well-adjusted adults who had never sought psychiatric treatment.

In these groups, the number of each sex were made equal and socio-economic levels ranged from low to upper class. Education ranged from 6 to 16 and age ranged from 18 to 36, with an average of about 28 years. These conditions were made equal in each group.

Scoring: The scoring of the Rorschach records was done by the author according to Klopfer's method. The author's modified method (6) was used for evaluation of form-level and Friedman's categories (4) were added. In analyzing the response verbalizations, Watkins & Stauffacher's categories (19) were used. The scoring system which was used is as follows:

1) General Scoring Categories

The following 32 items were picked from Klopfer's scoring categories: R, Rej. T/R_1, T/R_1 (chrom), T/R_1 (achrom), W, W%, D, D%, Dd, Dd%, S, S%, M, FM, m, C, CF, FC, C', K, FK, k, c, Fc, Sum C, F%, A%, At%, Sex, P, P%. Among these only P% was modified from the conventional $P\% = P/R \times 100$. P% increases for a while in proportion to the increase of R and then decreases abruptly. The following equation was adopted; $P/25 \times 100$, so that if R amounts to 25, most of P should appear. The above items were used as single signs and the ratios between these signs (e.g. experience balance) were omitted. In preliminary experiments these ratios proved not to be amenable to the present method of handling the data.

2) Evaluation of Form-Level

The problem of evaluation of form-level is very important and difficult. Its historical development has been described by the author (6) who accepts the validity of Klopfer's method.

But as Klopfer's method complicates the inquiry, it was necessary to simplify the method. The author set four levels of form; superior (+), good (±), poor (∓), pathological (−). The object of this evaluation is not only pure F responses, but all of the primary form responses, and in the calculation of F+%, both + and ± are grouped as + and both ∓ and − as −. There are two kinds of F+% calculations, one for the pure form responses and the other for all the primary form responses (F, M, FM, FC, FC', Fc, Fk, FK, etc.). Accordingly, the accompanying formulae, at the head of next page were used.

In addition to this method of expressing the form-level in F+%, we employed Friedman's method of rating form-level in relation to location.

$$F+\% = \frac{(F+) + (F\pm)}{\text{Sum } F} \times 100$$

$$R+\% = \frac{(F+) + (F\pm) + (M+) + (M\pm) \ldots + (FK\pm)}{\text{Sum } (F+M+FM \ldots FK)} \times 100$$

He classified W and D respectively into seven categories in accordance with the degrees of form quality. Among these, two categories, W− and D−, were rated by the author's modified method. W−% and D−% were calculated respectively from W−/W and D−/D. Other categories used by Friedman were omitted for they were less effective than W− and D− in preliminary experiments.

3) Basic Rorschach Score (BRS)

In our experience the BRS is useful in characterizing the schizophrenic group; the BRS of Bühler's (3) schizophrenic group is astonishingly similar to that of our SGr. But the BRS of their psychoneurotic group is far above that of ours. Considering the fact, however, that Hamlin et al (5) found a BRS rather near ours, it is evident that the difference should not be attributed to differences between Americans and Japanese. The BRS was simplified on the ground of practical necessity, and the weightings of the items were revised in terms of Japanese traits. The provisional modified BRS is composed of only 37 items (See Appendix). In the preliminary experiment the modified BRS, so far as it concerned our samples, was more discriminating than that of the original BRS, but both were used in this study.

4) Analysis of Verbalization

While Rorschach demonstrated that the pathological thinking of schizophrenia is projected on the Rorschach blots, the problem was more crucially investigated by Rapaport (14). What he has called "deviant verbalization" can be estimated quantitatively, though not too satisfactorily. We have some doubt about his classification, but have not yet come to a final conclusion. Accordingly, our classification follows generally that of Watkins & Stauffacher (19) which made possible a quantitative estimate of deviant verbalization.

A. (△ value = .25)
  1) Fabulized response; FR
  2) Peculiar verbalization; PV
  3) Mangled or distorted concept; MDC
B. (△ value = .50)
  1) Fabulized combination; FA
  2) Symbolic response; Sym
  3) Deterioration color; DC
C. (△ value = 1.00)
  1) Confabulation; Conf
  2) Contamination; Cont
  3) Autistic logic; AL
  4) Queer verbalization; QV
  5) Incoherence; Incoh
  6) Perseveration; Pers

The above list omits Confusion, Relationship Verbalization and Absurd Response, but these responses were regarded as belonging to Conf, PV, and QV. And Vagueness was omitted as it had been dealt with in the categories of form-level. Newly added Perseveration was given a △ value of 1.00 for more than four repetitions and a △ value of .50 in the case of three or four repetitions. Watkins & Stauffacher assign △ values according to the degree of deviation, even in one and the same category, but as it makes the judgement complicated, the △ values were fixed except in the cases of Perseveration. With the above exceptions, we summed the △ values by the same method as Watkins & Stauffacher and calculated △% by the following formula.

$$\triangle\% = \frac{\text{Sum } (\triangle \text{value} \times \text{frequency})}{R} \times 100$$

Statistical treatment of data: The data regarding the above four classifications—1) general categories, 2) form-level, 3) BRS, 4) △% — were examined first by the differences between means in the combinations of SGr. to PGr., SGr. to NGr., and PGr. to NGr. and when the differences were large in variance, they were tested by Cochran & Cox's method. In this way those factors were selected which showed, at the .01 level, a significant difference between SGr. and PGr. and between SGr. and NGr., and the relationships among these factors were pursued. And finally these factors were synthesized by Fisher's discriminant function into the RSS whose validity was examined.

RESULTS

1) General Scoring Categories

In Table I are shown the means and standard deviations for each group of the 32 Rorschach variables. It is evident from the F-test for difference between means of each group that the differences between SGr. and NGr. tend to be greater and those between PGr. and NGr. lower. P and P% are the factors which discriminate between SGr. and PGr. most significantly. The correlation between these two factors is .859 in SGr. and .598 in PGr. F-tests of differences between SGr. and PGr.

TABLE I—Comparison of Schizophrenic, Psychoneurotic and Normal Groups on Thirty Two Formal Rorschach Scores.

Sign	S		P		N	
	Mean	s	Mean	s	Mean	s
R	20.3	8.43	27.4	16.35	25.9	11.43
Rej	0.4	0.62	0.2	0.61	0.2	0.37
T/R_1	23.5	4.68	32.4	20.18	23.3	13.81
T/R_1 (chrom)	23.2	14.17	31.9	19.03	19.8	9.36
T/R_1 (achrom)	23.7	21.09	33.2	24.70	25.7	20.71
W	9.7	5.71	9.9	5.44	9.4	5.93
W%	48.9	18.04	41.2	21.94	39.0	17.98
D	8.9	5.65	14.9	12.76	13.1	7.29
D%	42.8	15.98	51.1	21.27	50.8	12.87
Dd	1.3	1.56	2.1	4.03	2.4	2.69
Dd%	6.8	7.42	6.2	7.41	8.6	9.49
S	0.6	0.79	0.7	0.76	0.9	1.73
S%	1.8	4.29	1.6	3.30	1.2	2.43
M	2.3	2.19	3.6	3.06	3.1	1.94
FM	2.1	1.91	3.4	2.93	3.4	2.48
m	0.4	0.49	0.7	1.72	0.4	0.57
k	0.3	1.27	0.4	0.68	0.4	0.93
K	0.3	0.66	0.5	0.86	0.2	0.37
FK	0.3	0.48	0.7	1.02	1.1	1.10
c	0.2	0.48	0.4	0.26	0.2	0.59
Fc	0.8	1.02	1.5	1.41	2.0	2.10
C'	1.0	0.33	1.4	1.57	0.7	0.85
C	0.2	0.50	0.2	0.61	0.1	0.14
CF	1.5	1.99	1.9	1.66	1.2	1.15
FC	1.51	2.11	1.9	2.26	2.7	2.51
Sum C	2.6	1.73	3.1	2.38	2.6	1.07
F%	53.5	16.32	45.5	15.42	43.8	14.15
A%	44.7	16.03	43.1	16.68	50.4	14.43
At%	10.2	15.46	7.2	6.96	3.4	3.29
Sex	0.4	1.48	0.7	1.80	0.0	0.00
P	3.4	1.75	5.6	1.62	6.1	1.52
P%	19.1	11.06	27.3	8.00	29.4	10.48

TABLE II—Comparison of Three Groups on Various Form-Level Scores.

Sign	S		P		N	
	Mean	s	Mean	s	Mean	s
F+%	46.0	25.76	64.3	16.38	78.8	16.20
R+%	47.3	22.45	68.4	12.04	77.6	13.78
W−%	34.0	22.76	11.4	11.37	3.6	5.93
D−%	21.0	29.38	7.0	11.53	2.6	6.27

TABLE III—Comparison of Three Groups on BRS and Modified BRS

	S		P		N	
	Mean	s	Mean	s	Mean	s
BRS	−24.5	10.75	−10.4	14.02	−3.9	13.89
BRS (Mod.)	−38.8	5.06	−14.5	14.41	−0.7	15.79

TABLE IV—Comparison of Three Groups on Sum △ and △ %.

Sign	S		P		N	
	Mean	s	Mean	s	Mean	s
Sum △	3.40	2.74	1.67	1.71	0.50	0.42
△ %	17.70	14.41	5.15	3.91	1.80	2.17

were made: for P, F = 25.47; and for P%, F = 10.82. Our decision was to include P rather than P% in the RSS.

2) Form-Level

Table II shows the comparison of means and standard deviations of F+%, R+%, W−%, D−% for the three groups. With the exception of D−%, differences between SGr. and PGr. are significant at the .005 level.

But there were high correlations between F+% and R+%: r = .912 in SGr. and .692 in PGr. The comparison between SGr. and PGr. was as follows: for F+%, F = 10.78; for R+%, F = 20.56. Consequently R+%, with the larger F value, was chosen for the RSS. W−% shows a negative correlation with R+%: r = −.756 in SGr. and −.242 in PGr. Therefore W−% was adopted. The difference between means of W−% in both groups yielded an F of 23.67.

3) Basic Rorschach Score

BRS and modified BRS values for each group are shown in Table III. Both BRS and modified BRS successfully distinguished SGr. from the others, but it is evident that the differences are larger when the modified BRS is used.

The difference between means of SGr. and PGr. on the modified BRS yields an F of 75.97, which, despite the large difference in variance ($v^2/u^2 = 8.13$) is significant at the .005 level. The comparison of BRS means yields an F of 19.11, significant at the .005 level.

4) Analysis of Verbalization

What is called "deviant verbalization" is quantified in the figures: Sum △ and △%. Table IV shows the means and standard deviations of these two scales.

Both Sum △ and △% are successful in distinguishing between SGr. and PGr. at the .01 level. △%, yielding an F of 21.02, was selected for RSS. For Sum △, F = 8.63.

5) Syntheses by Discriminant Function

By means of the above four analyses, the following were found effective in differentiating between SGr. and PGr.: number of popular responses from the scoring categories, R+%, W−% as a measure of form-level, the modified form of BRS, and △%. These five factors distinguish between the psychoneurotic and psychotic groups at the .005 level (F = 20.56-75.97). Though the modified form of BRS is very effective in itself in distinguishing SGr. from PGr., we next employed the discriminant function to maximize the power of the five variables to discriminate between SGr. and PGr. The first solutions of an equation of the first degree regarding these five factors are as follows:

$$\begin{aligned}
\lambda_1\,(R+\%) &= 0.23587 \times 10^{-3}\\
\lambda_2\,(W-\%) &= -0.12410 \times 10^{-3}\\
\lambda_3\,(\ P\ ) &= 4.06679 \times 10^{-3}\\
\lambda_4\,(\triangle\,\%) &= -0.99493 \times 10^{-3}\\
\lambda_5\,(\ BRS\ ) &= 1.22327 \times 10^{-3}
\end{aligned}$$

According to these solutions, Zij, with respect to values x_1ij, x_2ij, x_3ij, x_4ij, x_5ij, can be calculated by the next formula as shown in Table V.

$$Zij = x_1ij + x_2ij \cdot \cdot \cdot \cdot \cdot \cdot + x_5ij$$

Here, for the convenience of calcula-

TABLE V—Comparison of Three Groups in z Scores of Each Subject.

	1	2	3	4	5	6	7	8	9	10
S	−32.25	− 5.56	−70.85	−45.82	−17.47	−65.92	−17.07	−72.26	− 1.63	−31.12
P	26.07	27.51	56.08	25.15	− 2.74	29.52	−27.40	40.82	−14.81	9.39
N	25.60	58.96	65.10	− 0.70	10.36	59.52	66.32	35.24	54.51	53.01
	11	12	13	14	15	16	17	18	19	20
S	−73.38	−114.15	−15.24	−14.63	− 4.95	7.72	−54.19	−31.03	−54.39	− 7.62
P	36.37	0.78	26.30	36.12	18.92	9.48	24.73	7.38	20.39	1.92
N	40.75	49.33	54.97	27.98	84.90	75.59	16.03	30.06	59.58	41.17
	21	22	23	24	25	26	27	28	29	30
S	−70.63	−34.90	−137.39	−100.63	−87.65	−29.84	−32.08	−91.57	15.28	−13.12
P	31.32	− 8.91	56.82	2.30	−35.03	−20.24	14.28	17.61	47.14	0.39
N	30.37	45.90	14.95	19.66	23.05	67.57	29.16	36.45	12.78	85.97
	Mean									
S	−43.49									
P	15.23									
N	42.47									

tion, values were respectively multiplied by 1.000, and cut off at two decimals: R+% = 0.24, W−% = −0.12, P = 4.07, Δ% = −0.99, BRS = 1.22.

Table V shows the z scores of each group, λ values obtained by comparing SGr. with PGr. were assigned to the data of NGr. To obtain an average of the means of Z values for SGr. and PGr., the following formula was used.

$$Z = \frac{1}{2}(-43.49 + 15.23) = -14.13$$

This value is the cutoff point for discrimination between SGr. and PGr. As Table V shows there are 24 subjects (77%) in SGr. with $Z \leqq -14.13$, 4 in PGr. (13%) and none in NGr.

Accordingly, we decided to call a Z value of −14.13 or lower "Rorschach Schizophrenic Score" (RSS). The discrimination of this RSS seems to us more effective in classifying schizophrenia than the BRS alone.

DISCUSSION

Among 32 items from the formal scoring categories, only P and P% were found to discriminate at the .01 level between SGr. and PGr. If P responses are considered, as Allen (1) observed, to reflect social conciliation, acceptance of convention in real life, and as Phillips & Smith (10) claimed, to be related to the degree of acceptance of the traditional ways of action or socialization, the lowness of P in SGr. can be theoretically understood. Indeed Rieman (15) has reported that schizophrenic out-patients did not show significantly fewer P response than psychoneurotics. Also in our experience, rather high P responses are not uncommon among those schizophrenics who have comparatively high rapport and high intellectual level.

On the author's ratings of form-level, some differences between SGr. and PGr. occurred at the .01 level. The fact that what is called good form-level is low among schizophrenics is unanimously maintained by various views (in general, however, paranoid schizophrenia is said to be an exception). Beck (2) maintains that form-quality reflects ability to test reality and ego strength. Yet, as F+% correlates highly with intellectual level, it is very interesting that it is low in schizophrenia without mental deficiency. While Rieman (15) found no difference in P response, he found a difference significant at the .05 level in form-level. Friedman's (4) analyses of form-level according to location categories showed that schizophrenics' perceptual responses were in some respects like children's, and that in other respects they stood between children and adults. He concluded that despite indications of some perceptual regression, there remain functions of higher developmental levels. According to his report, the mean value of W−% in SGr. is 22%, and in the normal adult group, 0%. The difference is significant at the .01 level. But in D−%, the mean values of SGr. and NGr. are 26% and 14% respectively, and the difference is significant at the .05 level. Accordingly, W−% characterizes schizophrenia more definitely as our results indicate. In other words, the failure to grasp the form in W response is more distinctive than in D responses. Accordingly, among schizophrenics with comparatively high W%, F+% is lowered mainly by W− responses.

BRS was developed by Bühler in order to measure the integration level of personality. The score value decreases in the following order: normals, psychoneurotics, mental defectives and schizophrenics. While some degree of discrimination between psychoneurosis and schizophrenia is achieved by means of the BRS alone, discrimination is improved by our modified BRS.

The matter that demands special attention, however, is that the four integration levels shown by Bühler (adequacy, conflict, defect, loss of reality) and their defining scores do not agree with our findings. Therefore, we question the relative value of BRS alone.

The scores for the △ value presented by Watkins & Stauffacher (19) were examined later by Powers & Hamlin (13), Nagasaka & Matsuoka (9). Watkins & Stauffacher reported △ values of psychotics, psychoneurotics and normal adults as respectively, more than 10%, 5-10%, less than 5%. Powers & Hamlin reported mean values of △% as 33.5% in catatonic schizophrenia, 21.0% in paranoid schizophrenia, 20.53% in latent schizophrenia, 11.4% in psychoneurosis and 5.62% for normals. In Nagasaka's reports, they are: 22.9% in schizophrenia, 7.08% in psychoneurosis and 2.18% in normals. The values in our research are about the same as Nagasaka's and for the most part coincide with those of Watkins & Stauffacher.

As mentioned above these four methods of analysis are efficient in classifying schizophrenia and in discriminating between schizophrenia and psychoneurosis. Consequently it can easily be supposed that they become more effective when synthesized. In order to solve this problem mathematically, we adopted Fisher's discriminant function, set a RSS at the cut-off point as an objective method for diagnosing schizophrenia through the Rorschach. The RSS classified 77% of SGr. as schizophrenic as compared to 63% classified by the BRS. Much more research will be necessary to determine whether the RSS of −14.13 is the best cut-off point for other patients than those of ou samples.

Grayson (17) once criticized the BRS on two counts. They are: 1) sequence analysis by location and content are wholly omitted from the sign list, and 2) the list ignores content symbolism which provides rich clues to personality dynamics. These criticism may also apply to RSS. Nevertheless we wished to formulate a measurement method that can be used quantitatively and objectively. Similar goal were sought in Piotrowski's (12) alpha-formula and Taulbee & Sisson' (18) pattern analysis. RSS seems to have a wider sphere of application.

We are faced with the questions o what aspects or function of personalit RSS measures and which types o schizophrenia or psychoneurosis RS most successfully discriminates. W have neither the theories nor sufficien data to answer them. But it may safel be said that in cases of schizophreni with good rapport, high intellectua level and without general collapse o personality, misclassification will ofte occur. The limits of effectiveness o the RSS can not be specified withou further research.

SUMMARY

"Rorschach Schizophrenic Score" (RSS) provides a method for an objective and quantitative analysis o Rorschach protocols with the purpos of differentating schizophrenia fron other clinical groups, especially psychoneurosis.

RSS was first developed to include 1) formal scoring categories, 2) form-level ratings, 3) Bühler's Basic Rorschach Score, and 4) Watkins & Staufacher's $\triangle\%$.

As a result, it was found that P, R+% (including all the primary form responses), W−%, BRS and $\triangle\%$ differentiated the schizophrenic group from psychoneurotics and normals at the .005 level (F-test). Hence these five factors were synthesized by Fisher's discriminant function.

We obtained by this statistical method a Z score of −14.13, which was the cut-off point between schizophrenia and psychoneurosis. Thus $Z \leqq -14.13$ was called "Rorschach Schizophrenic Score" and 77% of the schizophrenic group, 13% of the psychoneurotics and none of the normals were classified as schizophrenic.

REFERENCES

1. Allen, R. M. *Elements of Rorschach interpretation*. New York: International Univ. Press, 1954.

2. Beck, S. J. *Rorschach's test*, Vol. II. New York: Grune & Stratton, 1945.

3. Bühler, Charlotte et al. *Development of the Basic Rorschach Score with manual of directions*. Los Angeles: Western Psychol. Services, 1949.

4. Friedman, H. Perceptual regression in schizophrenia. *J. proj. Tech.*, 1953, *17*, 171-185.

5. Hamlin, R. M. et al. Changes in adjustment following psychotherapy as reflected in Rorschach signs. In *"Success in psychotherapy"*, 1952.

6. Kataguchi, Y. *Psychodiagnostic technique: The Rorschach*. Tokyo: Maki Book Co., 1956.

7. Kendig, Isabel V. Rorschach indications for the diagnosis of schizophrenia. *J. proj. Tech.*, 1949, *13*, 142-149.

8. Klopfer, B. & Kelley, D. M. *The Rorschach technique*. New York: World Book Co., 1942.

9. Nagasaka, G. Rorschach test. In *Contemporary progress in psychiatry*. Tokyo: Ishiyaku Publ., 1957.

10. Phillips, Leslie & Smith, J. G. *Rorschach interpretation: Advanced technique*. New York: Grune & Stratton, 1953.

11. Piotrowski, Z. A. Experimental psychological diagnosis of mild form of schizophrenia. *Rorschach Res. Exch.*, 1945, *9*, 189-200.

12. Piotrowski, Z. A. An experimental Rorschach diagnostic aid for some forms of schizophrenia. *Amer. J. Psychiat.*, 1950, *107*, 360-366.

13. Powers, W. T. & Hamlin, R. M. Relationship between diagnosic category and deviant verbalizations on the Rorschach. *J. consult. Psychol.*, 1955, *19*, 120-124.

14. Rapaport, D., Gill, M. & Schafer, R. *Diagnostic psychological testing*. Vol. II. Chicago: Year Book Publ., 1946.

15. Rieman, G. W. The effectiveness of Rorschach elements in the discrimination between neurotic and ambulatory schizophrenic subjects. *J. consult. Psychol.*, 1953, *17*, 25-31.

16. Rorschach, H. *Psychodiagnostik*. Bern: Hans Huber, 1921.

17. Symposium on "Basic Rorschach Score". *Rorschach Res. Exch., & J. proj. Tech.*, 1949, *13*, 6-24.

18. Taulbee, E. S. & Sisson, B. D. Rorschach pattern analysis in schizophrenia. *J. clin. Psychol.*, 1954, *10*, 80-82.

19. Watkins, J. G. & Stauffacher, J. C. An index of pathological thinking in the Rorschach. *J. proj. Tech.*, 1952, *16*, 276-286.

Received September 8, 1958

APPENDIX

(Modified Form of Basic Rorschach Score)

No.	Item	+	−	No.	Item	+	−	No.	Item	+	−
1a	$R \leqq 24$		4	8a	$k + K = 0.5\text{-}1.5$	1		15b	$FC > CF + C$	3	
1b	$R \geqq 25$	4		8b	$k + K \geqq 2$		1	16	$CF + C \geqq 3$		2
2	Rejection $\geqq 1$		3	9a	$FK = 0$		3	17a	Sum $C \leqq 2.5$		3
3	$T/R_1 > 30''$		2	9b	$FK = 0.5\text{-}2.5$	2		17b	Sum $C \geqq 3$	3	
4a	$M = 0\text{-}1$		3	10a	$F\% \leqq 20$		1	18	T/R_1 diff. $> 10''$		1
4b	$M = 1.5\text{-}2$		1	10b	$F\% = 21\text{-}40$	5		19a	$W : M = 1 : 2$		2
4c	$M = 2.5\text{-}3.5$	1		10c	$F\% = 41\text{-}50$	1		19b	$W : M = 2 : 1$	1	
4d	$M = 4\text{-}12.5$	3		10d	$F\% = 51\text{-}75$		3	20a	$A\% \leqq 20$		1
4e	$M \geqq 13$		1	10e	$F\% \geqq 76$		4	20b	$A\% = 21\text{-}45$	1	
5	$FM = 0\text{-}1$		2	11	$Fc = 0$		2	20c	$A\% \geqq 46$		1
6a	$FM < M$	1		12a	$C' = 0$		3	21a	$P \leqq 3$		5
6b	$FM > 2M$		2	12b	$C' = 1\text{-}3$	3		21b	$P = 3.5\text{-}4.5$		1
7a	$m = 0\text{-}0.5$		3	13	Shading % < 20		2	21c	$P \geqq 5$	3	
7b	$m = 1\text{-}2.5$	3		14	$FC = 0$		3	22	$To : De = 2 : 1$	1	
7c	$m \geqq 3$		1	15a	$FC \leqq CF + C$		2	23a	$F- = 1\text{-}2$		1

APPENDIX *(Continued)*

No.	Item	+	–	No.	Item	+	–	No.	Item	+	–
23b	F– ≧ 3		5	28	fighting people or animal ≧ 2		1	33	4c (d) + 11		2
24a	3 or 4 repet.		2	29	caricature ≧ 3		1	34	4c (d) + 23b		5
24b	5 or more repet.		4	30	dead, ghost, etc. ≧ 3		2	35	4c (d) + 25		5
25	Conf., Cont., etc.		5	31	M ≧ 3 & Sum C ≧ 3	5		36	7a + 9a + 12a + 21a + 23b		5
26	Cn, Ink, etc.		5	32	M > 2(FC + CF + C)		1	37	4d + 10b + 12b + 15b	5	
27a	Sex = 1-2		1								
27b	Sex ≧ 3		3								

A Case Illustrating the Concept of the Alpha Schizophrenic

Zygmunt A. Piotrowski
The Jefferson Medical College of Philadelphia

David Levine
University of Nebraska

Our purpose is to present two Rorschach records which are separated by an interval of six years and three months in order to indicate spontaneous personality changes of a schizophrenic, and to demonstrate, on this individual, the principles of the systematic diagnostic approach which underlie the so-called alpha formula.

The alpha formula applies to patients whose capacity for energy control exceeds their capacity for energy output (8). The control is positive when the capacity for actual control over undesirable or anti-social impulses is very high; it is negative when the desire to act diminishes so much that the need for control is greatly reduced. The basic principle of the formula implies that some schizophrenics do not manifest the secondary symptoms of their mental disorders openly because they control, or have reduced, the intensity of their emotional and intellectual processes to such a degree as to produce hardly any specific and easily recognizable schizophrenic symptoms. These patients, therefore, frequently present serious problems of clinical diagnosis. However, data were presented which demonstrated that some of these patients can be accurately diagnosed on the basis of the Rorschach test. They will reveal the following Rorschach pattern: (a) few whole responses; (b) few color responses; (c) more light shading than color responses. Since color responses and whole responses reflect energy output, and light shading responses reflect energy control, Piotrowski postulated that in schizophrenics as well as in other psychotics, there is a significant disproportion between energy capacity and energy control (4). When control exceeds potential energy output the patient is called an alpha case; when control is significantly weaker than energy output, the patient is called a beta case.

One of us (D.L.) has come across a patient who had given a Rorschach which did not conform to the alpha formula but which contained distinct schizophrenic Rorschach features. In the last seven years, the patient improved clinically (staying outside of hospitals and supporting his family as well as himself) and, at the same time, his Rorschach record changed. In his recent Rorschach record, there are no longer distinct schizophrenic features but the record is now that of a typical alpha case. At the time of his last record, the patient gave a spontaneously written essay on anxiety and treatment. In this essay, he described his mental processes and his theory of the causes and effects within his mental life which took place after the manifest onset of his psychosis. The importance of this description, and the theory it contains, lies in the fact that it coincides very closely with the alpha schizophrenia theory of the patient's subjective experiences (4). It is a document of more than symptomatic significance. Recently Beck (1), using a very different Rorschach diagnostic approach, described a form of schizophrenia, S-3, which resembles alpha schizophrenia in most of its essential traits. Beck noted that these schizophrenics change little over the years which is important prognostically. Molish's (3) type B-Al is identical with Beck's S-3 type. This author stated that the principle underlying the alpha schizophrenia concept "is of import in relation to the findings of the B-A1 group." Thus, whatever the name by which he is called, the alpha schizophrenic is important both theoretically and practically.

The patient, a handsome, white male of French-Italian descent, the oldest of nine children, was born in a small town in the east. The father is said to have provided adequately for his large family. The patient described his mother as controlling, but fair and capable. There is no record of a disabling mental disorder in the immediate family. Birth and early development were apparently normal. Diphtheria, at the age of six, was followed by some speech defect, which is now absent. The parents became overprotective and the patient was called a "sissy" by his playmates. Although his marks were very high, the patient left school during the 11th grade because he was "too nervous to sit in school all day." From the time he left school until he entered the Army at the age of 18, he changed jobs frequently. During his military service he was confined near the arctic circle with three other men in an isolated area for several months at a time. According to Army records, he started to become moody and discouraged one month after he arrived at the arctic station. Periodic furloughs helped him over his depressions. After being stationed there for thirteen months, he was hospitalized with the following complaints: Moody, seclusive, unable to sleep, and frequent crying spells. During a brief hospitalization followed by a 21-day furlough to the States, "on one occasion, he beat his head against the wall," and "it helped him temporarily." On this furlough he married a girl he had known only about three weeks. Soon he sent her away to live with his family who disapproved of her because of her religion and because they considered her beneath them. Five months later, he was again hospitalized, this time for various somatic complaints. It was after discharge from the hospital that he was returned to the United States. During the following four months he held at least four different assignments and was hospitalized four times. His complaints consisted of depression, excessive brooding, vague somatic disturbances and suicidal thoughts. When he took an overdose of phenobarbital, an Army medical board classified this as a suicidal attempt, although the patient denied any suicidal intent. During this four-month period the patient underwent plastic surgery by a civilian physician for "lop ears." About four months after his return to the States, he was admitted to an Army hospital for the last time. He was "lying on his bunk refusing to answer questions or to undress, crying softly and clinching and unclenching his fists." The patient was "seclusive with sporadic periods in which he mixed quite well." Usually he stayed in his room, although fearful of being alone; he claimed to have no taste for food, no interest in anything. He was discharged from the Army two months later with the diagnosis of psychoneurosis, mixed type.

The patient's first admission to a Veterans Administration Hospital occurred at the age of 23, a little over two years after his discharge from the Army. He complained that for the three weeks preceding admission he had felt depressed, apathetic and extremely tired. Also he had been unable to sleep, had had difficulty concentrating on his work, and had thought obsessively about suicide. He stated that he had entered the hospital voluntarily because he was afraid that an easy opportunity to commit suicide might present itself during one of his spells of depression. However, at the time of his admission he declared he did not feel he would commit suicide. About a month before admission he had been seized suddenly with an urge to travel; he had left his family impulsively and had been absent for three and one-half days without being able to recall his whereabouts. Apparently his consciousness was clouded at the time. The police found him and returned him to his family. He used to take long walks by himself. He dreamt every night and his dreams were odd and inexplicable to him. He reported one repeated dream in which he was falling from a great height and was then attacked by a pack of dogs. After nine days he left the hospital against medical advice. He was in excellent contact when admitted to the hospital and at no time during the nine days were there any overt signs of delusion or hallucination. He claimed that prolonged hospitalization would interfere with the fulfillment of his responsibilities toward his family. He had then one three-year-old child, and his wife was due to give birth to another. He told the social worker that he did not want to leave but "felt it my duty to be by my wife at this time and also because my mother wants me to leave here—it is hurting her too much to have me here."

Three months later the patient was re-admitted to the same hospital with essentially the same complaints but they were less acute. However, he had one additional complaint. He said he had taken to heavy drinking two or three nights a week until the early hours of the morning. He returned to the hospital because one of the psychiatrists on the hospital staff was "the only person I have had confidence in." He summed up his condition as follows: "It seems like I am just walking up a blind alley and getting nowhere in my work. And I am somewhat unhappy." The moment he entered the hospital, his tension decreased markedly. He was in good contact, pleasant and cooperative, displaying no clinical evidence of psychosis. Less than four weeks after admission, on the very day he was to be transferred to the chronic service, he escaped, leaving no message. It was during this second admission that the first Rorschach record was obtained. The patient returned to the hospital voluntarily for the third time, four months later, arriving at 3:00 a.m. He had just squandered $300 on a ten-day binge, leaving his wife and children without money. He insisted that now his major problem was alcohol. He had tried Alcoholics Anonymous with little success. The patient also started to stress his marital difficulties. He disclosed that his wife had left him every so often, taking the youngest child with her, and he described her as cold and frigid. The wife had been twice in a mental hospital. Once she had electric shock treatment. During this third admission the patient himself was diagnosed as schizophrenic by the psychiatric staff for the first time. He was discharged with maximum hospital benefit three weeks after his admission. His next admission, five months later, was almost identical with the preceding one. He arrived late at night after a spree, voiced the same complaints, adjusted well to the hospital and was discharged with maximum hospital benefit after a month. He reported having three dreams of coitus with his wife during this admission. In one of the dreams a door opened. His free association was that his parents were interfering with his marriage. Social Service established that the patient's parents, especially the mother, were taking a very active part in the patient's life. The fifth admission took place seven months later, again at the end of a drinking bout. This time, he left against medical advice six days after his admission "to help his father who was ill."

The patient was hospitalized five times during the period of about two years, but never spent more than four weeks in the hospital at any one time. This two-year period was crucial in the patient's life, and yet there were no important changes in the patient's external or environmental conditions. Then followed a five-year period during which the patient was not seen in the Veterans Administration hospital, but was admitted voluntarily to a state hospital which he left in less than two weeks with a diagnosis of alcoholism. On his most recent admission, following the five years of relative calm, the patient explained: "I don't know what it is. I was O.K. until a month ago. I have a responsible job; I am throwing it away. I don't know what I am afraid of, what I am running away from. I can't put my finger on it. I have nightmares of being chased or followed; of guys putting their hands on me but I always wake up before they do." He had locked himself in his room on several occasions because "I have this terrible fear." Once, while slightly intoxicated, he closed himself in the bathroom and slashed his wrists. His parents reported that, when drunk, "he walks around like a zombie and expresses ideas of worthlessness." He had separated from his wife. The second Rorschach record was obtained, and the patient wrote the spontaneous essay on anxiety and its treatment during this last admission. The patient was discharged after about a month during which he showed no overt psychotic symptomatology.

Ten months following this last discharge from a Veterans Administration hospital, the patient was invited to come for a follow-up. He reported doing well. He was dressed in expensive-looking, somewhat gaudy, sport clothes and drove a late model automobile for which he said he had paid cash. He added that he had been working as an automobile salesman, making over $200 a week from the time of his discharge. He said also that he had saved much of this money and had gone into business for himself. He had remained separated from his wife, and a divorce was pending. His two sons were in a private school of his religious denomination; his daughter, the youngest child, was with his wife. He confided that he was "going with" another woman, a school teacher, and was seriously thinking of marrying her.

When asked directly how he had managed to stay out of hospitals he answered: "I haven't had a drink in six years." When drunk, he did not have the necessary caution and self-control to deal with difficulties. Now "I can live with what I have. I study my reactions before I react." We feel that these statements are characteristic of the kind of people who are termed alpha schizophrenics. The patient's Army history was gone over with him and he confirmed our information except for one incident. He insisted that the catatonic-like episode which led to his discharge from the Army had resulted from overindulgence in alcohol and other drugs ("goof balls") at a party. He expressed the belief that the Army psychiatrist had diagnosed him as mentally ill in order to prevent a court martial. According to the Army records, the psychiatrist felt he was dealing with an "early schizophrenic." This impression is in keeping with the patient's subsequent development. At the time this article is being written, the patient has not been in a mental hospital for over four years. The patient has never been in psychotherapy outside of a hospital, while the "psychotherapy" in the hospital consisted of a minimal attendance at group orientations and unscheduled meetings with the ward physician. This patient has had no psychotherapy in or outside the hospital. This is an important point because the conclusion that a rise of the alpha formula score is associated with improvement, and a drop of the score with a worsening of the schizophrenic's psychological condition was reached after a study of schizophrenics who had not received any systematic or prolonged psychotherapy (5).

THE FIRST RECORD

The patient was referred to psychology with the request for a diagnostic impression during his second post-service hospitalization when he was 23 years, 10 months of age. The clinical history suggested that the differential diagnosis would be between schizophrenia and psychoneurosis. Schizophrenics often struggle against their psychosis for years before they finally succumb to apathy or hallucinations. Before the manifest onset of the

RORSCHACH RECORD OF A MILD SCHIZOPHRENIC MAN OF 23 YRS. 10 M.
INTELLECTUALLY SUPERIOR

No. of Resp.	Score			IntRT	Response
				I	
(1)	W	Fc′	a P	4″	Bat.
(2)	D	FM	a		Perhaps even a crab.
(3)	W	Fc	a P		Butterfly.
(4)	d	c′c	x-ray		X-Ray.

(Bat General appearance. () First of all it is black. The general outline. — (Crab) Two claws coming up. () The position of the claws on the body. The appearance, like an open hook ready to grasp. () General look, aspects, the outline. (Hook-like top center extensions, down to upper edge of two upper white spaces in the middle). — (Butterfly) The transparency in the center. The whole outline. The transparency is most important. — (X-Ray) Just the center (of right side) because of the transparency. Not any particular thing; an x-ray. () Because it's positive and negative (light and dark).

				II	
(5)	D	FC	a	23″	Again, part of a Butterfly

In the tail. () Back of the butterfly. () The outline, and the color. (Bottom red).

				III	
(6)	W	M	h P	24″	To go to extremes, it might be two men trying to pick something up; a caricature more than anything else.

() Head, neck, body, arms, legs, even shoes, eyes. Not a true picture because it's not a good outline, no good characteristics.

				IV	
(7)	W	Fc	ad P	14″	Skin of small animal.

() The texture more than the outline.

				V	
(8)	(DW	FM—	a O)	41″	Hmm! Nothing at all. Discouraging?

() Do you want the wildest figment of my imagination? () Might be a rabbit running. I see the legs flying back here (side extensions). Elongated ears. Legs also, seen from above (bottom center).

				VI	
(9)	D	F	ad	48″	An insect's head is all I can get out of that.

The outline, two eyes, "tendrils". I'm not too sure about the choice of words. (Vertical middle detail from "whiskers" up).

				VII	
(10)	W	c′c	map	33″	Map of something.

Topographical map. () The dark spots indicate the mountains. Also the lighter spots (helped to get the idea).

				VIII	
(11)	D	FM	a P	14″	Animal climbing something.

Very clear. () The outline. () Very nearly perfect. There is a little distortion in one leg. (Right side pink).

IX

(12)	DS	mC	pl O	25″	Something budding forth. Maybe the bud of a flower.

The large white portion (top center) seems to be bursting out. () The petals (orange) on the sides appear to be giving way. () The color.

X

(13)	DW	CF	astr O	21″	Reminds me of the zodiac.
(14)	W	CF	smb O		Surrealism.

(Zodiac) The crabs, the scorpion (side blues) () Again I think the color is very important. () The zodiac has green, blue, gray and brown. That is how I got it. () The color and the crab. (Means a colored picture of the zodiac); — (Surrealism) Some sort of message. Trying to put something across. () Just done at random. () The blots are perfect in appearance. () Color and symmetry are most important.

TABULATION

W	6	M	1	a	6	No. Resp.	14
DW	2	FM	3 (1—)	ad	2	R (VIII-X)	4
D	4	mC	1	h	1	Time	11′
DS	1	c′c	2	pl	1	T/R	79″
d	1	Fc′	1	Xray	1	R (VIII-X) %	29
		F	1	map	1		
		Fc	2	astr	1	IntRT (1-X)	22.9″
		FC	1	smb	1	IntRT (col)	29.4″
		CF	2			IntRT (nc)	22.5″
F+%	100						
a%	57						
h%	7						

$W : M = 8 : 1$
$M : \Sigma C = 1 : 3\frac{1}{2}$
$\Sigma c : \Sigma C = 5 : 3\frac{1}{2}$

disease, the patients frequently complain about disturbing dreams which keep haunting them during their waking hours (as did our patient). Obsessive and compulsive ideas usually precede all other symptoms by many years (in our case, fear of suicide and precautions against it).

Statistics based solely on the frequency of components are not helpful in diagnosis, particularly if the psychosis is one of mild degree. Rorschach provided four different sets of statistical data as alleged aids in the diagnosis of schizophrenia. A glance at Table VIII in his *Psychodiagnostics* shows that statistics for the least deviated, "well-preserved" schizophrenics do not differ from statistics for the normal group. Other investigators have had similar results with this kind of approach. Only a pathognomonic or a systematic approach can be helpful (4). The systematic approach is a form of pattern analysis.

From the diagnostic viewpoint, the most conspicuous feature of our patient's record is the failure to interpret plate V during the performance proper. Piotrowski (6, p. 425) found failure on plate V only in records of severely disturbed patients with little chance for improvement. It is a rare feature which occurs more frequently in schizophrenics than in organics, and appears very rarely in other subjects. It made us feel that the patient was a serious case. This impression was strengthened by an analysis of the patient's reaction to plate V during the inquiry: "A rabbit running. I see legs flying back here (bottom center). Legs also elongated ears (top center), legs also (sides)." It is possible to see a good rabbit in the entire vertical center of the plate, but this patient confabulated. The ears and (center) legs were his clues. However, he became unable, suddenly and unexpectedly, to isolate visually the vertical center from the rest of the blot. Applying the "rabbit" image to the entire blot, he created a poor form response. In a perseverating answer he called all the extensions, except the top center, "legs." He realized something was wrong and called this response the "wildest figment of my imagination," but he could not (like many cases with intracranial pathology) correct his response. Such a perceptual defect is always very significant, particularly if it occurs in the record of an intelligent and obsessive patient. Psychoneurotics do not manifest such perceptanalytic confusion; psychotics do. It implies that, at times, the quality of the patient's thinking drops markedly, to the point of becoming unrealistic. From the fact that there was only one poor response of this kind in the record, we can infer that the patient manifested confused thinking only at rare intervals. E. Bleuler (2) indicated that the difference between moderate and severe "dementia" (which is not necessarily irreversible) is an extensive and not an intensive one. The mildest case of schizophrenia can commit as great a piece of folly as the most severe, but he commits it much less frequently.

The long initial reaction time and the minimal number of pure form responses are conspicuous in the record of a man whose IQ is high. (Shipley-Hartford 130, Revised Beta 117) and whose emotional responsiveness to the environment (ΣC) is not only adequate in intensity but is satisfactorily controlled ($\Sigma c:\Sigma C$). In a patient with an IQ of over 120, one would expect more than one human movement response. Since uninhibited individuals tend to be ambiequal, i.e., have about the same number of human movement and color responses (10), it is probable that the patient's fantasy life and his conscious thoughts regarding his role in interhuman relationships have been inhibited. If so, he found his prototypal life role unacceptable. One's life-role is one of the least modifiable traits and does not change without powerful motivation (6). Since the patient was not in deep psychotherapy, we had to conclude that the personality changes were motivated by endogenic factors, among which could be an incipient schizophrenic process. A cerebral organic disease was unlikely because of the high level of imagination, the accuracy of thought at nearly all times (only one response, #8, out of 14 is very poor and was given with hesitation, during the inquiry) and the speed and ease of interpretation.

In early schizophrenics, any definite signs of psychosis are likely to appear only in conditions of emotional stress. The need to adjust to others creates a tension and stress in most schizophrenics. In the Rorschach this is likely to be manifested in plates which have chromatic colors and elicit color responses. The patient's response to plate VIII is unexpectedly meticulous: "very nearly perfect"; "little distortion in one leg." This accurate percept contrasts with the vague and uncontrolled response to plate V, "the wildest figment of imagination." Schizophrenics produce by far the greatest surprises and variations in mental production. Response #12, "something budding forth" so that sides have to give way, expresses a basic life function, a favorite preoccupation of schizophrenics. Response #13 takes us into the wide spaces of the universe, and response #14 refers to the capacity of the mind to unravel the significance of coincidences: "a message; trying to put something across" though "blots are perfect in appearance." Being original, responses #12 to 14 indicate matters of great personal importance to the patient. Thinking of the universe and then seeing a message in something done at random (which on a psychological level means: done unconsciously or achieved by powers outside the patient's control) suggests schizophrenia.

The schizophrenic signs — aside from the conspicuous drop in the level and quality of intellectual performance in plate V — were weak and therefore the psychosis would be hardly conspicuous clinically. The more the tabulated components approach the expected distribution, the less is a mental disease noticeable on superficial observation. With advancing deterioration, the capacity to maintain a near-normal surface personality and near-normal social behavior decreases. This is reflected in increasing deviations of the tabulated data from the averages of the group to which the patient belongs on the basis of his age and intelligence.

The prognosis for the next three-year period was evaluated with the Piotrowski-Lewis three-year prognostic criterion (9). The patient obtained a score of plus 2 points; this suggested that, at the end of the three-year period following the taking of the Rorschach record, the patient probably would be improved somewhat or would be in about the same condition. The chances for remaining unchanged or somewhat improved were about the same: The patient displayed intellectual passivity on plate V; he did not direct his thinking critically and consciously. This sign of intellectual passivity contributed a minus one point to his criterion score. He received a score of plus one point for his single FC response, and a score of plus two points for the human content percentage which was seven. The total prognostic criterion score of plus two points is just barely above the critical point.

The most conspicuous features of the Rorschach indicate the salient traits of the personality. The range of the initial reaction times from 4 to 48 seconds, with a failure to interpret V during the performance proper, suggests a marked state of tension, consciously and fully felt. The animal percentage (too high for a bright subject), the near-absence of human content (only one h or hd), weakened in significance by referring to caricatures and not to living people, and the limited number of human movement responses, point to an impoverished inner life or fantasy. Intellectual productivity is much below its potential level. Primary thought disturbances would be expected from the handling of plate V. Intermittent depressive moods are indicated by the two dark-color responses, the butterfly in I and the map in VII. Since each c′ is given a weight of 1.5 points and each Fc′ a weight of 1 point, the Σc′ is 2.5 points which is rather high. The patient had a very strong dark shock in plate V. A dark-shock, like any shock measurable in terms of time needed to give the first scorable response, is a sign of neurotic anxiety and of an unconsciously motivated conflict. In the case of the dark-shock, a patient is ambivalent about whether or not he should become fully aware of depression which results from a realization that his personal liabilities are so great that they prevent a normal and satisfactory adjustment to, and active handling of, interpersonal and other social problems. The difference between the color shock (plate II or plate VIII shock) and the dark-shock lies in the emphasis. In every case of neurotic anxiety (which in this case would be conceived as being superimposed upon the schizophrenic psychosis) there is a mixture of inner and outer factors; the environment always plays some role in the development of the anxiety, and so do personal traits or weaknesses. However, when there is dark-shock the patient tends to blame his own personal weaknesses for his failures, while when there is color-shock, he tends to blame others, the social environment, or other objective difficulties of life (6). It can be inferred, then, that our patient would feel strongly — in view of the acuity of his dark-shock — that he has serious personal weaknesses which are responsible for his difficulties, and that he would be very ambivalent about becoming fully aware of his feelings of personal inadequacy and of his tendency to reduce the scope of his activities, a tendency which usually accompanies a depressive attitude. About a week before his Rorschach the patient expressed a fear of committing suicide if he were not in a hospital when overcome by a severe depressed mood. Yet, after less than a month in the hospital he eloped from the place of refuge. This behavior illustrates his ambivalence clinically.

THE SECOND RECORD

The second Rorschach record was taken when the patient was 30 years old or 75 months after the first one. To the psychologist wishing to use the Rorschach as a diagnostic aid, the first record presented diagnostic problems very different from those posed by the second record. In the first record, the chief argument for psychosis was based on the failure to respond to plate V, the peculiar "message" response to plate X, the perceptual confusion about the inquiry response to plate V, and the single instance of sudden meticulousness about a small detail (plate VIII: "very nearly perfect—little distortion in one leg"). At the time of his first Rorschach examination the patient was adequately self-controlled but moments of much lowered self-control were possible because of the patient's intense anxiety. The latter was indicated by the long average initial reaction time of 23″ and the great difference of 44″ between the shortest and the longest IntRT. Since there were also incidental (pl. III and VIII) though classical signs of obsessiveness (the patient criticized adversely the fit between his percept and the respective blot area), we could infer that his self-control was adequate on the whole. The very inferior confabulated response to pl. V indicated the patient's thinking broke down occasionally and was unrealistic.

During the interval between the two records the patient underwent a marked personality change and became an overcontrolled case with an alpha formula score of eight points, according to the revised formula (7). The low number of whole responses, four, contributed one point, the absense of color responses, three points, and the difference between the sum of weighted light shading and sum of color responses, four points. When the formula score is higher than five, there is practically no doubt that the patient suffers from a mental illness more serious than a mere psychoneurosis. The patient could be a manic-depressive psychotic, a schizophrenic, or an organic cerebral case. With so much restraint and control, the patient was obviously not manic. He could not be said to be depressed because the speed of his responses was too rapid and too smooth. The intermissions between his responses were brief, the readiness to perform was good, and the variation in content (including such percepts as Santa Claus, insignia, royalty) was varied. The high level of intellectual performance, the accuracy of thought and perception, the ease and self-assurance with which the responses were given, and the independence with which the patient decided himself whether his responses were adequate or not, seem to rule out an organic brain disease. By elimination then, schizophrenia remained as the sole possibility.

The striking disappearance of color responses led to the conclusion that the patient had become emotionally flat and must appear withdrawn. The human movement responses did not change in number (there was only one M each time), but changed in type. In the first record, the men in pl. III cooperated in "trying to pick something up." During the second examination, the men were "quarreling, quibbling; both have hold of an object, whatever it is." The patient had become aggressively competitive and acquisitive in his basic attitude toward others and in his philosophy of life.

The drop of whole responses from 8 to 4 indicated a drop in the patient's readiness to exert himself in order to accomplish something worthwhile which would testify to his ability and bring rewards. The pattern composed of few W, no color responses, many light shading responses and high F+%, indicated good capacity for

RORSCHACH RECORD OF SAME MALE SCHIZOPHRENIC INTELLECTUALLY SUPERIOR AT AGE 30 YRS. 1 M.

No. of Resp.	Score	Response
		I
		To me it's just an ink blot.
(1)	D F ad	I see what might be a crab or a lobster.
(2)	d c'c x-ray	Might be an x-ray negative in the center part. Dark and light effect. That's it.
(3)	d F± map	Outline of geographic map, peninsula, island. That's it.
(4)	W F smb	An insignia.
(1) Claws. (3) The edge. (4) The shape. () An eagle.		
		II
		This I see very clearly.
(5)	D FMc a	An outline of a dog. Bushy forehead. Snout. Forepaws. Might be sitting up.
(6)	D F a	Bottom looks like a horseshoe crab. Outside of that I don't see a thing.
(5) Nose and ears. (6) The shape.		
		III
(7)	W M h	Here I see a caricature of two men. Seem to be quarreling, quibbing. Both have a hold of an object, whatever it is.
(7) Fighting over a package.		
		IV
(8)	DW F— ad	At a quick glance, a scotty dog.
(8) Face, ears. At a quick glance looks like a scotty's head.		
		V
(9)	D F a	This reminds me of a rabbit right away.
(10)	DW Fc'c— ad	Over-all picture of a rabbit skin roughly. The dark and the light.
(9) Ears. (10) Looks like fur before processing.		
		VI
		Do you have to look at it one way? Can you turn it? ( )
(11)	d F hd	Outline might be Santa Claus. Might be some kind of royalty.
(11) The outline – beard flowing out. Profile shows peaked crown and flowing beard.		
		VII
(12)	D c'c map	Map. Topographic. Dark and light effect.
(12) Resembles a map of some sort. Cartographic.		
		VIII
(13)	D F a	Two rodents. That's all I really get out of this one by any stretch of the imagination.
(13) Two small rodents. () Physical shape resembles animal with 4 legs.		
		IX
(14)	DS FCwpl	This reminds me of some kind of plant or flower. Petal, cabbage, cauliflower. The white in the middle would indicate a cauliflower.
(14) Just the shape. () Looks like a large bud with petals around it.		

X

(15)	D F a	Here I insult my I.Q. I see two crabs.
(16)	D F ad P	Rabbit's head.
(17)	D F a P	I see two dogs very clearly.

---

(15) Faintly resembles a crab.

TABULATION

				a	6	No. Resp.	17
				ad	4	R (VIII-X)	5
				h	1	Time	15
W	2	M	1	hd	1	T/R	.88'
DW	2	FMc	1	pl	1	R (VIII-X) %	29
D	9	c'c	2	x-ray	1		
DS	1	Fc'c	1 (1—)	map	2	IntRT	below 10"
d	3	F	11 (1 1/3—)	smb	1		
F+%	82	FCw	1			W:M=4:1	
a%	59					M:ΣC=1:0	
h%	12					Σc:ΣC=4½:0	

precise routine work but one associated with avoidance of responsibility. This conclusion was strengthened by the very brief and even initial reaction times and the absence of color shock. If anything, the patient showed the opposite of color shock, for he remarked immediately, when handed plate II, that he saw everything very clearly and proceeded to interpret the plate. If this was a counter color-shock reaction, it suggested a well compensated neurotic anxiety. The way in which the patient evaluated his responses to plate II and VIII, i.e., plates which elicit color shock, implied that one of his main defenses was intellectualization. He spoke clearly, controlled his production deliberately, and evaluated the adequacy of fit of his images with the blot areas, as if to make certain that his reaction to plate II and VIII (the best measures of neurotic anxiety on the Rorschach) be controlled and not impulsive. This analysis of his own responses was one way to increase caution and decrease the danger of spontaneity. His control failed him somewhat when the patient was exposed to the darkest plates. The initial reaction times were brief but the quality of the response was poor. In plate IV, the scottie dog face was suggested to the patient by the upper half of the plate; the eyes were the dark elliptical inside small details on the level of the enclosed white spaces on the sides. The vertical center of V evoked the good rabbit response but this percept prompted him to interpret the entire blot as "a rabbit skin roughly." Since he manifested no color shock, the patient was not inclined to blame others for his difficulties.

In a brief record of 17 responses, given by an intellectually superior adult, there were three crabs, three rabbits, two maps, and two dogs. This pointed to stereotyped thinking, devoid of imagination. This lack of imagination, combined with the striking over-control, prevents gratifying achievement. Though the emotional interest in others was very limited, this man wanted prestige which meant that he was consciously interested in security. The desire for prestige was indicated by the "insignia" in plate I, the "royalty" in VI, and the remark that his I.Q. was being insulted. Since the patient did not exert himself in order to achieve anything noteworthy, his desire for recognition was likely to remain unfulfilled. Being aloof does not suffice to secure the respect of others. During the re-examination there was no dark shock; the patient had apparently lost the fear of fear, the fear of what is new and unknown. However, the tendency to intermittent depressive moods has increased in intensity.

The patient experienced a very moderate sex shock. On plates VI and VII he avoided the central areas which frequently evoke frank sexual associations and instead, "perceived" the crowned head of a bearded king or of Santa Claus in the low side edge of pl. VI. One might speculate that the patient had erective difficulties: the out-flowing beard of the king was soft and the cauliflower bud (pl IX) grew slowly. All aspects of life, including the psychosexual one, were restrained. Even the animal movements became subdued and non-aggressive as compared with those produced in the first record. The sole FM referred to "a dog with a bushy forehead, sitting up" as if begging. One important reason for drinking, the desire to feel freer inwardly, disappeared. The FM became less expansive than the M. Presumably then, the patient would not feel freer when under the influence of alcohol (6). In the first record, the M was less active and expansive than the FM; at that time the patient drank heavily. This change in the M and FM suggested that there had been a shift in repression. The aggressiveness had become conscious: it appeared in the M. The patient was ready openly to compete with others; it was probable that the striking rise in self-control (more exactly, self-restraint) made it possible for the patient to face his aggressiveness because its overt manifestations would be well controlled. The increase in pure form responses from two to eleven (in a record of 17 responses) also points to restored inner calm; the patient did not take practically everything as a matter of great personal importance as he had done earlier. His ability for being objective, for viewing problems with a degree of detachment, had been restored. Simultaneously, the number of original responses had dropped and the number of popular responses had increased, indicating that the patient was now thinking more common and less unusual thoughts. The decreased need for conscious and deliberate self-control is reflected also in the disappearance of the emphasis on the symmetry of the blots.

During the interval between the two examinations, the patient stopped drinking heavily, had separated from his wife, and looked better than on previous examinations. The favorable three-year prognosis, based on the first record, was thus confirmed.

The Alpha formula is not applicable to every case. It is valid only when the following conditions obtain: $W<7$ and $\Sigma c \geqq \Sigma C$. When both conditions obtain, both high and low alpha scores are admissable, i.e., we can both detect and eliminate, with the aid of the formula, conditions more serious than a mere psychoneurosis, with the expectation of being right in 85% of the cases. If only one condition obtains, only the high scores, pointing to the presence of a disease more serious than a psychoneurosis, are valid; the low scores then cannot be used to eliminate a psychosis. In this patient's first Rorschach record, only one condition ($\Sigma c \geqq \Sigma C$) obtained; therefore the low score of 0 did not allow any definite diagnostic conclusion. Both conditions obtained in the second record; moreover, the alpha score was very high, 8 points, strongly suggesting a psychosis. The patient was a schizophrenic. The change from an alpha score of 0 points to a score of 8 points, after an interval of over six years, can be interpreted as a sign of great improvement. The patient had become more steady, better controlled, and less likely to undergo a change for the worse for at least several years. The clinical improvement paralleled the changes in the alpha formula scores and was brought about with no psychotherapeutic or chemotherapeutic intervention. This improvement was maintained for at least four years after the second examination when the patient was seen for the last time.

THE PATIENT'S ESSAY

About a month after his second Rorschach examination in which he disclosed himself as an "alpha case," the patient spontaneously wrote the following essay in long-hand. For the sake of brevity, repetitions have been deleted (about one-half of the essay). Deletions are indicated by series of dots:

"What are the figmentary and real fears that lead to the condition identified by the terminology anxiety. What is the cause or causes of the decline in confidence that accompanies this hypothesis? An accumulation of undesirable traits and habits formed during one's childhood and adolescence? An unwillingness, or inability to face normal responsibilities, or make decisions, as a result of these undesirables? It would seem that indecision and irresoluteness of purpose would be closely associated with the manifestation of these fears and subsequent breakdown of confidence. The attitudes cultivated as a result of indecision, and irrational decision is certainly not conducive to mature insight into the problems facing every adult . . . The subsequent fears, real or imaginary, would seem to be a direct result of this deteriorated confidence, i.e., the fear of inability. What path then would one pursue for clarification and elimination of the undesirable personalities which perhaps are the underlying causes for the feeling of inadequacy, which further manifests itself in anxiety. Surely the understanding of one's defects and negative qualities are not a sufficient footing on which to build a new character . . . Armed with this preliminary self-knowledge, one could then take positive action on the shortcomings so disclosed. For any degree of success, the action should be associated with a profound determination for a follow through with no unrelated influence . . . This modus operandi may be coincided with an honest effort to eliminate another manifestation of anxiety; a super-abundance of self-centeredness. This presents a more difficult problem, inasmuch as one is not always fully aware of this condition in its entirety . . . It might be beneficial throughout this whole process, for one to firmly believe that he is not really ill, but merely lacking in knowledge of the reasons for his anxiety . . . It would appear to be of paramount importance for anyone attempting this metamorphosis to abstain from any indulgence in the more common forms of escapism, notably alcohol, and the narcotics. These greatly impair the powers of perspection and reason, and, of course, present new related problems. If continued use of these methods for escape from anxiety are employed, they will no longer be a secondary symptom, but illnesses in themselves, and very real ones."

"One should attempt to replace these methods for flight from reality and their resulting phantas-magoria, with more constructive means to accomplish a similar end. In this direction, one may adopt several of many outlets for a satisfactory substitute. It might be extremely wise for one to avoid all excesses in any field, including professional or business connections, and to progress on as orderly and systematic routine as possible. It would seem that perhaps the one obstacle presenting itself here would be a complete acceptance. This in turn would appear to present the additional obstacle of differentiation. How does one really know when he has accomplished acceptance following admission? Perhaps a simple approach here would be the favorable method. It is likely that merely believing one has accepted, without any further analyzing would instill the effect desired."

The essay shows that the patient knows something about modern theories of anxiety and symptoms. He says that the effects of anxiety are so disturbing that a wish develops to alleviate anxiety. He traces the real and imaginary fears to "the fear of inability" or lack of self-confidence. The new personality relieved of intense anxiety cannot be built of negative qualities. He then considers whether insight would give relief. Insight or self-knowledge should be followed by "positive action on the shortcomings". This action should be determined, pervading and nothing should deter it. Even more difficult is the elimination of another manifestation of anxiety: "a superabundance of self-centeredness". To improve, the patient must be "always fully aware of this condition in its entirety," i.e., of the extent of his self-centeredness, or of the division between oneself and the environment. He then makes the remark that this concentration upon surrounding reality is helped if the patient believes that he is not really ill, but is "merely lacking in knowledge of the reasons for his anxiety". It would be better, he continues, if the patient knew the causes of his fears and anxiety but retained his belief in his mental health. Alcohol, narcotics and other avenues of escape through indulgence (and diminution of consciousness) make the condition only worse. These "methods for flight from reality" should be replaced "with more constructive means to accomplish a similar end". By offering his solution, the patient unwittingly gives the rational of the alpha patient behavior: "It might be extremely wise for one to avoid all excesses in any field . . . and to progress on as orderly and systematic routine as possible." The complete acceptance of the restraint involved in this psychological change is very hard, notes the patient, speaking, no doubt, from personal experience. He ends by saying that it is best just to accept the change "without any further analyzing", as if to suggest he might get worse if he had more insight into the implications of his personality change. It is probable that also other patients have described how it feels to change from a non-alpha to an alpha case, thus giving support to the theory underlying the alpha personality change concept.

REFERENCES

1. Beck, S. J. *The six schizophrenias: reaction patterns in children and adults.* New York: Am. Orthopsychiat. Assoc. Mon. no. 6; 1954.

2. Bleuler, E. *Dementia praecox or the group of schizophrenias.* New York: Intern. Univ. Press; 1950. (1st ed.; 1911).

3. Molish, H. B. *Schizophrenic reaction types in a naval hospital population as evaluated by the Rorschach test.* Washington: U.S. Navy Dept.; 1956.

4. Piotrowski, Z. A. Experimental psychological diagnosis of mild forms of schizophrenia. *Rorschach Res. Exch.,* 1945, *9,* 189-200.

5. Piotrowski, Z. A. A defense attitude associated with improvement in schizophrenia and measurable with a modified Rorschach test. *J. Nerv. Ment. Disease,* 1955, *122,* 36-41.

6. Piotrowski, Z. A. *Perceptanalysis: a fundamentally reworked, expanded, and systematized Rorschach method.* New York: Macmillan Co,; 1957.

7. Piotrowski, Z. A., and Berg, D. A. Verification of the Rorschach alpha diagnostic formula for underactive schizophrenics. *Amer. J. Psychiat.,* 1955, *112,* 443-450.

8. Piotrowski, Z. A., and Lewis, N. D. C. An experimental Rorschach diagnostic aid for some forms of schizophrenia. *Amer. J. Psychiat.,* 1950, *107,* 360-366.

9. Piotrowski, Z. A. and Lewis, N. D. C. An experimental criterion for the prognostication of the status of schizophrenics after a three-year interval based on Rorschach data. In *Relation of psychological tests to psychiatry.* New York: Grune & Stratton, 1950, pp. 51-72.

10. Piotrowski, Z. A., and Schreiber, M. Rorschach perceptanalytic measurement of personality changes during and after intensive psychoanalytically oriented psychotherapy. In *Specialized techniques in psychotherapy.* New York: Basic Books, 1952, pp. 337-361.

Received June 30, 1958
Revision received October 6, 1958

A Developmental Study of Sexual Functioning by Means of a Cognitive Analysis[1, 2]

ELSIE MARIE SJOSTEDT AND IRVING HURWITZ
Worcester State Hospital

There has been widespread application in clinical practice of the psychoanalytic theory of sexual function; in contrast, there have been relatively few attempts to verify these theoretical propositions by controlled systematic research. These concepts were originally derived from the treatment of neurotics and have been confirmed largely through subsequent application in psychoanalytic therapy. It seems desirable to supplement this kind of confirmation by submitting hypotheses regarding sexual development to controlled investigation. Among the comparatively few studies in this area are those by Sears (26) and Blum (1) with humans, and those of Kortlandt (14) and Levy (17) with animals. Some of the studies listed by Sears have been in accord with psychoanalytic theory and some not, but the comparatively small number of such investigations points up the difficulty of submitting psychoanalytic views to empirical test. The aim of the present study is an indirect empirical verification of some aspects of psychoanalytic theorizing regarding stages of psychosexual development and related notions of regression and/or fixation. More precisely we are concerned with the placement of normal controls, exhibitionists, and homosexuals along an hypothesized continuum of psychosexual development.

Psychoanalytic theory postulates that sexual development progresses through stages defined in terms of a dominant body zone. These stages are designated by Freud as "oral," "anal," "phallic," and "genital" (8, p. 622). Freud summarized psychosexual development in the following manner: "... *libido-function,* as we call it — does not first spring up in its final form . . . but goes through a series of successive phases unlike one another .... The turning-point of this development is the *subordination of all the sexual component-instincts under the primacy of the genital zone* and, together with this, the enrolment of sexuality in the service of the reproductive function" (7, p. 288). The objective of genital primacy, then, is intercourse with a biologically appropriate object, and measurement of its achievement is made in terms of the degree to which the sexual aim is intercourse with an adult of the opposite sex. Deviant sexual behavior is presumed to represent fixation at or regression to a psychosexual level more primitive than the genital stage. However, a study of the literature reveals not only a surprising lack of definitive statements as to the placement of various perversions at specific stages along the psychosexual continuum, but contradictions as well. Exhibitionism has been described as a perversion in which the level of fixation is at the phallic stage (2), whereas lower level anal problems have been considered of crucial importance in homosexuality. On the other hand, the homosexual

---

[1] This investigation was supported by the Dementia Praecox Research Project, Worcester State Hospital, and a research grant (M-896) from the National Institute of Mental Health, Public Health Service.

[2] The authors express their appreciation to Drs. Leslie Phillips and John E. Lane of the Psychology Department, Worcester State Hospital, and to Mr. Stephen Margulis, Clark University, for their assistance in the preparation of this paper. We also gratefully acknowledge our debt to Drs. Peter Bell, Chief, Psychiatric Field Services, Wisconsin Division of Corrections, John Ehrmann, Senior Clinical Psychologist at the Wisconsin State Prison in Waupun, and Rudolf Mathias, Chief Psychologist at the Wisconsin Diagnostic Center, for making available the data on sexual deviants.

has been described as follows: "The homosexual is the most mature of all perverts; he can love the object" (4, p. 75). In general, perversions have been described as attempts to deal with castration anxiety (5, p. 326), but it is apparent that psychoanalysis does not present a unified viewpoint as to the level of maturity which these various resolutions represent. Because of this lack of agreement regarding the sexual deviations, the present study, rather than embodying tests of precise hypotheses, takes on an exploratory cast.

A developmental approach which differs from that which is basic to psychoanalytic theory has been the study of formal developmental principles by Werner, who states: "... wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration" (28, pp. 2-3). Werner's structural principles have been most clearly marked out in the realm of perceptual-cognitive functioning. Recently, however, certain psychoanalytic theorists, for example, Rapaport, Hartmann, Kris, and Loewenstein (24, 9, 10, 11), have interpreted psychological development, especially with regard to ego functioning, in terms which approximate Werner's fundamental structural (formal) principles. Analogously, Kortlandt has described the psychoanalytic theory of the sexual instincts in formal developmental terms:

> During ontogeny the partial instincts mature, are conditioned, and function more or less independently of each other for some time before they are integrated into larger units, and these larger units in their turn remain independent for some time until as a consequence of further maturation, they join together as components in a still higher unit of organization, and so on. This sequence justifies the recognition of developmental stages or phases in instinctive organization, viz., the oral phase, the anal-sadistic phase, the phallic phase and the genital phase, corresponding with as many hierarchical levels in the driving system of 'sexual' behavior (14, pp. 157-8).

In the present study a formal parallelism between sexual development, described above by Kortlandt, and perceptual-cognitive development, described by Werner, is assumed. This is proposed in a general sense, for we do not assume a point-to-point correspondence between the stages attained in the two spheres. Thus, we are conceptually unifying two areas, sexuality and cognition, by viewing them in terms of common structural principles of development. Since from a formal point of view, the development of perceptual-cognitive behavior is buttressed by an experimental background, such a procedure may enable us to clarify some of the inconsistencies of surface differences that obtain in psychoanalytic views of sexual development. That this is a fruitful approach to the study of sexual expression is suggested by Kruger's study (15). She confirmed the hypothesis that thoughts of becoming perverted represented a higher order of development than active perverted behavior, i.e., the former group functioned at a cognitively higher level. The perceptual-cognitive approach within a developmental orientation has been further profitably used in the study of such diverse areas as behavior under stress (18), level of social attainment (16), psychopathological expression (21), and creativity (12).

Assuming, then, a formal correspondence between sexual development and developmental level in the perceptual-cognitive sphere, it is possible to examine the question of a theoretically presumed level of sexual development by an analysis of level of perceptual-cognitive development.

In this study we shall first examine the proposition that deviant sexual behavior represents a more primitive form of sexual expression than genital primacy. To test this, we shall compare the perceptual-cognitive level of development of a psychiatrically classified group of sexual deviants (homosexuals and exhibitionists) with normal heterosexual controls. Secondly, we shall seek to determine, by a comparative analysis of perceptual-cognitive functioning, whether the exhibitionist should be viewed as occupying a higher or lower place on the psychosexual continuum than the homosexual. From an examination of these two questions we should be able to determine the relative positions of three groupings, namely, exhibitionists, homosexuals, and married heterosexual controls, on the continuum of psychosexual development. Finally, we shall explore the question of sexual development among individuals who concurrently function on two levels of sexual expression, as is the case with married exhibitionists and married homosexuals. Further study of persons who show such variability will be made by comparing the achieved level of perceptual-cognitive maturity of married deviants with their unmarried deviant counterparts and with matched normal control cases.

METHOD

Subjects

Deviant Groups. Seventy-four male, white deviants were included in this study. Except for traffic violations and "drunkenness" charges in ten per cent of the cases, these men had no known record of arrests for offenses other than sexual perversion. In regard to position in family, educational attainment, and occupation there were no striking observations with the exception of the unmarried exhibitionists, who demonstrated marginal adjustment in their general life situation.

Sixty-three deviants were obtained through the Psychiatric Field Services of the Wisconsin Division of Corrections. From a total of about 800 cases studied since enactment of the Sex Deviate Law in 1951 the senior investigator selected for further analysis only those individuals convicted of various sexual crimes who were considered "sexually deviant" by the observing psychiatric team. Fewer than 400 cases were so described. From these, all deviants convicted on charges of exhibitionism and homosexuality[3] were screened again, and those with records of antisocial activity such as stealing, major physical disability or suspected endocrine imbalance, or a diagnosis of psychosis were excluded. Thus, the major dimension upon which the sample was selected was form of sexual expression. Many of the unmarried deviants in the final selection admitted past and present masturbatory activity. None had maintained a close, long-term relationship with a woman, and the few contacts with women which were reported were either on the basis of casual "pick-up" or characterized as friendly, but not involving sexual intimacy. Three deviants were obtained from the Milwaukee County Hospital for Mental Diseases, and eight were drawn from Worcester State Hospital files. These eleven cases were selected by the criteria described above.

The following groups comprised the deviant sample: 13 unmarried exhibitionists, 23 married exhibitionists, 23 unmarried homosexuals, and 15 married homosexuals. In the two married groups heterosexual activity co-existed with either exhibitionism or homosexuality. It must be added, however, that case histories were not always adequate, and judgments as to exclusion from or inclusion into any of the four groups sometimes had to be based on incomplete evidence.

The thirteen unmarried exhibitionists ranged in age from 18 to 53, with an average age of 26.6 years. Nine had records of previous arrests for "indecent exposure." It was difficult to collect this group of relatively pure cases because of the frequent occurrence of other forms of symptomatic behavior in such individuals.

The twenty-three married exhibitionists ranged in age from 20 to 56, with the average being 31.8 years. About sixty per cent had records of previous arrests for indecent exposure, the arrests dating back fifteen years in one case. Seventeen had one or more children, one other had stepchildren, and the wife of another was pregnant at the time of the offense. The unmarried and married groups exhibited themselves before females ranging in age from late childhood through adulthood, with the preponderance of victims in the adolescent group; in some cases exposure occurred on the street before a passing populace.

---

[3] All cases of pedophilia with male children were reviewed, but it was not possible to obtain a large-enough sample for statistical study.

The twenty-three unmarried homosexuals ranged in age from 18 to 57. The average age was 29.1 years. Most of them admitted previous homosexual experience, but only four had records of legal infractions because of deviation. Mutual masturbation, oral and anal copulation, and coprolagnia were represented.

The fifteen married homosexuals ranged in age from 20 to 49, with an average age of 32.5 years. Ten had one or more children, and in two cases their wives were pregnant for the first time when the offense occurred. One-third had records of previous arrests for homosexual activity. For neither of the two homosexual groups was the partner younger than 13 years.

Control Groups. A total of 80 controls were used in the present study. Sixty were selected after a survey of all non-symptomatic married males collected over a period of years for various research projects at Worcester State Hospital. An additional twenty were tested for the present study. All controls were white, married, and, so far as could be determined, free of psychiatric symptoms. That is, none had records of antisocial activity, alcoholism, psychiatric hospitalizations, nor deviant sexual behavior. The age range was from 18 to 66, with an average age of 33 years.[4] The majority had one or more children.

Assessment of Perceptual-Cognitive Maturity

The Rorschach, individually administered and scored developmentally, served as the basis for assessment of perceptual-cognitive maturity (22). The designation of several factors as indices of low development is based on the following principle: "... genetically low responses are those which indicate amorphous, diffuse, or confabulatory percepts where little attention is given to part relations and to perception of contours" (28, p. 25). Thus, global, undifferentiated responses where no form determinant was elicited (Wa, Da), vague percepts (Wv, Dv), those of inadequate form level (W−, D−), contaminations, confabulations, and fabulized combinations (Index of Primitive Thought — IPT), and a composite score which included amorphous, form minus, and confabulatory responses (Inadequate-Unorganized Per Cent — IU%) were considered indicative of primitive functioning. Also included in the category of low developmental scores were responses traditionally related to immaturity in which color, shading, texture, and vista (all designated X) were the only determinants (23, pp. 42-44).

The next higher level of perceptual-cognitive development included these scores: XF, CF+C, and XF+X. XF was the score where color, shading, texture, or vista was considered more important than form, whereas CF+C included only those percepts where color was either dominant over form, or was the sole determinant. Finally, XF+X included all form-subordinate responses.

A higher level of development was reflected in those responses in which form was dominant over color (FC) and in FX, which included all percepts where form was dominant over other determinants. Also included in this general level was Fx, an index arrived at by assigning a numerical value to FX, XF, and X. Whole integrative (Wi) and detail integrative

---

[4] The average age was computed from the 63 subjects whose precise age was known.

(Di) were also at this high-intermediate level; such responses have been defined as the appropriate organization of two or more adequately perceived blot elements into a unified response, the unification occurring in one case in the whole card and in the other in a common detail. An index of Wi plus Di over a denominator of W plus D comprised another score, Adequate-Organized Per Cent (AO%). Finally, vista responses in which form was dominant (FV), which is related clinically to introspection and reflection, were also placed within this group.

From other research utilizing the genetic scoring method, two factors, in particular, have emerged which seem to reach the highest level of cognitive development, functional integrative (Fi), and human movement (M) responses. The latter is the traditional index of human movement, while the Fi score is based on an interaction between two or more conceptually independent sub-units in the presence of M, FM, and m. In the present investigation Fi and M were considered to reflect the highest level of development. More detailed information on the genetic scoring system may be found elsewhere (22).

Questions about the location of percepts were gone over with the psychologists who originally obtained the Rorschach protocols. After all Rorschachs had been scored, any problems in scoring were discussed with two psychologists well versed in the use of the genetic method.

RESULTS

The first step in the analysis involved a test for differences among the five groups (four deviant and one control) on each of the developmental indices. The chi-square median test, a non-parametric analogue of the one way analysis of variance, was chosen as appropriate for this type of data (27). Thus, for any given Rorschach index the grand median for all five groups combined was determined, and the numbers of cases from each group that were above and below this midpoint were entered in a 2 x 5 table. If the value of chi-square computed from this table was large enough to reject the hypothesis of homogeneity among the groups at the .05 level, that Rorschach factor was then further studied.

In the second phase of the study each deviant group was compared with every other deviant group and with its matched controls on that factor found to be discriminating on the chi-square test. Two individuals were selected from the 80 normal heterosexual males to correspond in age and intelligence with each deviant individual. Matching for age was done by grouping the subjects into the following ranges: 24 and below, 25-34, 35-44, and over 45 years. Matching for intelligence was accomplished by categorization of test results into "Dull," "Average," and "Superior." Intelligence measures administered to the deviants included Corsini's Immediate Test (a vocabulary), the 1916 Stanford-Binet Vocabulary, Wechsler-Bellevue I, Wechsler-Bellevue I Verbal Scale, Wechsler- Bellevue II, Wechsler Adult Intelligence Scale, and an Otis intelligence scale. For the controls, intelligence measures included the vocabularies from Wechsler-Bellevue I, Wechsler Adult Intelligence Scale, and the 1916 Stanford-Binet. It is to be noted that all the tests were either solely verbal or contained a substantial verbal section. A table of equivalents devised at Worcester State Hospital was used to establish the comparability of intellectual level obtained from these different instruments. An attempt was made, also, to match for number of Rorschach responses, and for eighty per cent of the controls the difference in number of responses from that which the deviants gave was five or less. It was not possible to match number of responses closely for the group of unmarried homosexuals, who tended to give unusually long protocols.

Adopting the .05 level of significance, Kolmogorov-Smirnov two-sample technique (27) was used to test for differences between any two groups. Since exact values of D associated with various significance levels for small samples of unequal size are tabulated for only a few selected sample sizes, approximate critical values of D (for .05 level) were computed from the formula $D=1.36 \sqrt{\frac{n_1+n_2}{n_1 \; n_2}}$ Although use of this formula is not recommended for sample sizes of less than, say, 30, values of D so computed are slightly larger than the exact values tabled by Massey (20), i.e., our test is "conservative."

The results obtained from the first phase of the analysis (chi-square median tests) are presented in Table I. As may be noted, overall differences among the groups obtained with respect to only one factor, namely FC. This score was further studied, using the Kolmogorov-Smirov technique, and the results of these analyses are indicated in Table II.

The proposition that deviant sexual activity is associated with a lower order of cognitive development than genital dominance was not corroborated by these data. Contrary to expectation, the combined group of deviants produced significantly more FC responses, which are associated with relatively mature perceptual-cognitive functioning, than normal controls. When the various specific groups were compared, it was further found that married homosexuals produced significantly more FC than their matched controls.

TABLE I—Rorschach Factor Comparisons among Unmarried Homosexuals, Married Homosexuals, Unmarried Exhibitionists, Married Exhibitionists, and Normal Controls by the Chi-Square Median Test.

Rorschach Factor*	Chi-Square
Wv	2.37
Dv	3.65
Da	2.61
W−	2.35
D−	7.81
IPT	1.58
IU%	4.77
X	5.01
XF	4.58
CF+C	1.06
XF+X	3.35
Wi	1.58
Di	2.00
AO%	1.40
FC	14.65**
FX	6.02
Fx	1.46
FV	8.57
M	5.25
Fi	3.47

* One Rorschach factor not tested because of small expected frequencies.
** Significant at .05 level.

TABLE II—Kolmogorov-Smirnov D-Values for FC

Groups	Computed Value of D
Deviants vs. Controls n-74 n-80	.22*
Homosexuals vs. Exhibitionists n-38 n-36	.23
Unmarried Homosexuals vs. n-23 Unmarried Exhibitionists n-13	.32
Unmarried Exhibitionists vs. n-13 Matched Controls n-26	.27
Unmarried Homosexuals vs. n-23 Matched Controls n-46	.24
Unmarried Deviants vs. n-36 Married Deviants n-38	.12
Married Exhibitionists vs. n-23 Married Homosexuals n-15	.25
Married Exhibitionists vs. n-23 Matched Controls n-46	.20
Married Homosexuals vs. n-15 Matched Controls n-30	.47*
Married Exhibitionists vs. n-23 Unmarried Exhibitionists n-13	.23
Married Homosexuals vs. n-15 Unmarried Homosexuals n-23	.15

* Significant difference at .05 level.

In order to derive as much information as possible from the data, it was next decided to depart from the predetermined mode of analysis described above. Thus comparisons between all pairs of groups, using the Kolmogorov-Smirnov test and the .05 level of significance, were undertaken for several of the Rorschach factors that had not been judged significantly discriminating by the overall chi-square analysis. The suggestions emerging from this less rigorous analysis may be summarized as follows: When the various Kolmogorov-Smirnov comparisons were made with respect to D−, it was discovered that unmarried deviants produced significantly more of such developmentally low responses than did married deviants (D of .33). When the various Kolmogorov-Smirnov comparisons were made with regard to other Rorschach factors, no differences were found at the .05 level of significance. However, if we had previously adopted the .10 level, we would have rejected the hypothesis of no difference between unmarried homosexuals and unmarried exhibitionists for FV and IU%. There is some evidence that unmarried homosexuals produced more FV (D of .44) and IU% (D of .46) than the unmarried exhibitionists. On the basis of the suggestive finding that unmarried homosexuals produce more FV it is proposed that they are sexually more mature than exhibitionists, but their greater production of inadequate-unorganized percepts (IU%) complicates the picture. It does seem that unmarried homosexuals have within their repertoire both more primitive and more mature responses than unmarried exhibitionists. It is also of interest to note that unmarried homosexuals produced more percepts of the inadequate-unorganized type (IU%) than their matched controls (D of .33).

Summarizing the performance of each group we note that neither exhibitionistic group differed significantly on any Rorschach factor from each other nor from their normal controls. The unmarried homosexuals were the most expressive of all the deviant groups and offered more high as well as more low level responses than the unmarried exhibitionists. The unmarried homosexuals produced more low level responses than their matched controls. The married homosexuals were significantly different from their controls on only one variable, and in the opposite direction from that which was predicted.

DISCUSSION

The results of this study did not provide sufficient information to order homosexuality, exhibitionism, and normal sexual expression to a unitary continuum of psychosexual development. It was not possible to infer from the data that the deviant groups are developmentally lower than the normal controls, nor was the evidence adequate to answer the question of the relative ordering of exhibitionists and homosexuals.

The meager and equivocal findings are perhaps undertandable in terms of certain limitations in the nature of the investigation. Thus, the assumed correspondence between levels of sexual and cognitive development may not be precise enough for level of cognitive functioning to provide an adequate index of psychosexual development. Further, the classification of subjects was probably too broad; for example, the grouping "homosexual" may obscure many subtypes, thus attenuating the results. The gross nature of the matching procedure and the insensitive mode of statistical analysis dictated by the nature of the data may also be noted in this connection.

Granting these inadequacies in the overall design, there are, however, some interesting implications deriving from the study. The deviant subjects as a group, and particularly the married homosexuals, would appear from our data to be developmentally higher than the normal controls (greater production by the former group of relatively mature FC responses). That this inference may be correct, at least for homosexuals, has been suggested by Hooker:

> ...what is difficult to accept (for most clinicians) is that some homosexuals *may* be very ordinary individuals, indistinguishable, except in sexual pattern, from ordinary individuals who are heterosexual. Or — and I do not know whether this would be more or less difficult to accept — that some *may* be quite superior individuals, not only devoid of pathology (unless one insists that homosexuality itself is a sign of pathology) but also functioning at a superior level (13, p. 29).

On the other hand, the view that homosexuality is an indicator of grave pathology has also been expressed: " . . . it is an abnormal personality development . . . . When such homosexual behavior persists in an adult, it is then a symptom of severe emotional disorder" (3, p. 2). In this study there was minimal evidence that unmarried homosexuals were less mature than the heterosexual normals, i.e., they had a tendency to produce more primitive IU responses. Coupling this tentative inference with the apparent greater maturity of the married homosexual, it appears that the present data mirror the contradictory views found in the literature regarding the maturity level of homosexuals. Our findings, then, raise the question of the implication of marriage for the general question of developmental level of sexual perverts. Further light is thrown on this issue by noting that the married deviant subjects as a group were developmentally higher than the unmarried deviant subjects, i.e., they were characterized by fewer immature responses (D—). The suggestion is that heterosexual association, holding the question of deviation constant, is itself reflective of higher developmental functioning.

With regard to the question of the relative ordering of exhibitionism and homosexuality, the results are again inconclusive. The only information relative to this issue was found in comparing the unmarried homosexuals with the unmarried exhibitionists. Although these findings must be interpreted with extreme caution, it appears that the homosexuals give more high level responses (FV) *as well as* more low level responses (IU%). The reasonable inference may be entertained that among homosexuals a wider variation in developmental level is found than is the case with exhibitionists. This supposition seems to accord well with the discrepant views we have noted regarding the level of maturity of homosexuals. Some of the homosexuals' comments bear upon this topic; a few of the married group indicated that they sought a marriage partner because they hoped in this way to solve the problem of their homosexuality. This attempted solution, based on dissatisfaction with their mode of sexual expression, we would view as a constructive effort towards resolution, and thus indicative of relatively mature functioning. This interpretation is perhaps supported by the fact that therapy with homosexuals tends to be more successful if the individual is discontented with his way of life (25).

In general, then, we would suggest that there is a real lack of homogeneity in the broad classification "homosexual." The spectrum of behaviors subsumed under this term may encompass a variety of relationships, ranging from those in which the partner is apparently held in affectionate and tender regard to those wherein the sexual behavior represents fleeting and more obviously self-centered, primitive attachments. As regards developmental level we would speculatively place exhibitionists somewhere within the range of developmental levels characterizing homosexuals. Typically, the exhibitionist is married and for many of our subjects the first deviant episode occurred after some major change in the relationship with the wife, e.g., pregnancy. Thus, the phenomenon seems more an acute reaction to a marital crisis than the typical enduring pattern of the homosexual.

Consideration of the findings suggests that it is somewhat artificial to view a delimited deviant sexual form in isolation from the rest of the personality organization. The unmarried exhibitionist seems to be characterized by generally immature behavior whereas the married exhibitionist appears to follow a relatively harmonious developmental pattern until the appearance of the symptom in response to marital "difficulties." The sexual behavior of the homosexual groups, both single and married, appears to reflect an early disturbance in relationships, which should be manifested by unevenness in other dimensions of behavior. Such an hypothesis may be fruitful to pursue in future research.

SUMMARY

This study attempted to verify some aspects of psychoanalytic formulations regarding stages of psychosexual development. Assuming a formal correspondence between sexual development and developmental level in the perceptual-cognitive sphere, the proposition that deviant sexual behavior is more primitive than genital primacy was tested by examination of the Rorschach performance of deviant and heterosexual subjects. This hypothesis was not corroborated. The second aim was to determine, by a comparative analysis of perceptual-cognitive functioning, whether the exhibitionist should be viewed as occupying a higher or lower place on the psychosexual continuum than the homosexual. Evidence was not adequate to answer the question of the relative ordering of exhibitionists and homosexuals, but the data did suggest that among the latter a wider variation in developmental level is found than is the case with exhibitionists. Finally, the cognitive performance of individuals who behave in both a deviant and heterosexual fashion was examined. The results indicated that marriage, independent of type of perverted sexual behavior, is associated with higher levels of perceptual-cognitive functioning. The limited findings of this study were discussed in the light of conflicting opinions found in the literature pertaining to sexual deviation.

REFERENCES

1. Blum, G. S. *Psychoanalytic theories of personality*. New York: McGraw-Hill, 1953.

2. Christoffel, H. Male genital exhibitionism. In S. Lorand & M. Balint (Eds.), *Perversions psychodynamics and therapy*. New York: Random House, 1956, Pp. 243-276.

3. Committee on Cooperation with Governmental (Federal) Agencies of the Group for the Advancement of Psychiatry. Report on homosexuality with particular emphasis on this problem in governmental agencies. Report No. 30, Jan., 1955.

4. Feldman, S. S. On homosexuality. In S. Lorand & M. Balint (Eds.), *Perversions psychodynamics and therapy*. New York: Random House, 1956, Pp. 71-96.

5. Fenichel, O. *The psychoanalytic theory of neurosis*. New York: W. W. Norton, 1945.

6. Ford, C. S., & Beach, F. A. *Patterns of sexual behavior*. New York: Harper & Bros., 1951.

7. Freud, S. *A general introduction to psychoanalysis*. New York: Liveright, 1935.

8. Freud, S. Three contributions to the theory of sex. In A. A. Brill (Ed.), *The basic writings of Sigmund Freud*. New York: Modern Library, 1938, Pp. 553-629.

9. Hartmann, H. Notes on the reality principle. In *The psychoanalytic study of the child*, Vol. 11. New York: International Univer. Press, 1956, Pp. 31-53.

10. Hartmann, H., & Kris, E. The genetic approach in psychoanalysis. In *The psychoanalytic study of the child*, Vol. 1. New York: International Univer. Press, 1945, Pp. 11-30.

11. Hartmann, H., Kris, E., & Loewenstein, R. M. Comments on the formation of psychic structure. In *The psychoanalytic study of the child*, Vol. 2. New York: International Univer. Press, 1946, Pp. 11-38.

12. Hersch, C. The cognitive functioning of the creative person: A developmental analysis by means of the Rorschach test. Unpublished doctoral dissertation, Clark Univer., 1957.

13. Hooker, Evelyn. The adjustment of the male overt homosexual. *J. proj. Tech.*, 1957, *21*, 18-31.

14. Kortlandt, A. *Aspects and prospects of the concept of instinct*. Leiden: E. J. Brill, 1955. (Reprinted from "Archives Neerlandaises De Zoologie", Tome XI).

15. Kruger, Alice K. Direct and substitute modes of tension-reduction in terms of developmental level: An experimental analysis by means of the Rorschach test. Unpublished doctoral dissertation, Clark Univer., 1954.

16. Lane, J. E. Social effectiveness and developmental level. *J. Pers.*, 1955, *23*, 274-284.

17. Levy, D. Animal psychology in its relation to psychiatry. In F. Alexander & Helen Ross (Eds.), *Dynamic psychiatry*. Chicago: Univer. of Chicago Press, 1952, Pp 483-507.

18. Lofchie, S. H. The performance of adults under distraction stress: A developmental approach. *J. Psych.*, 1955, *39*, 109-116.

19. Massey, F. J., Jr. The distribution of the maximum deviation between two-sample cumulative step functions. *Ann. Math. Statist.*, 1951, *22*, 125-128.

20. Massey, F. J., Jr. Distribution table for the deviation between two-sample cumulatives. *Ann. Math. Statist.*, 1952, *23*, 435-441.

21. Phillips, L., & Framo, J. L. Developmental theory applied to normal and psychopathological perception. *J. Pers.*, 1954, *22*, 464-474.

22. Phillips, L., Kaden, S., & Waldman, M. Rorschach indices of developmental level. *J. genet. Psychol.*, in press.

23. Phillips, L., & Smith, J. G. *Rorschach interpretation: Advanced technique*. New York: Grune & Stratton, 1953.

24. Rapaport, D. *Organization and pathology of thought*. New York: Columbia Univer. Press, 1951.

25. Rubinstein, L. H. Psychotherapeutic aspects of male homosexuality. *Brit. J. med. Psychol.*, 1958, *31*, 14-18.

26. Sears, R. R. Experimental analysis of psychoanalytic phenomena. In J. McV. Hunt (Ed.), *Personality and the behavior disorders*, Vol. 1. New York: Ronald Press, 1944, Pp. 306-332.

27. Walker, Helen M., & Lev, J. *Statistical inference*. New York: Henry Holt, 1953.

28. Werner, H. The concept of development from a comparative and organismic point of view. In D. B. Harris (Ed.), *The concept of development: An issue in the study of human behavior*. Minneapolis: Univer. of Minn. Press, (Reprint of chapter.)

Received October 11, 1958.

BOOK REVIEWS

Sigmund Freud, *Collected papers.* New York: Basic Books, 1959. Five volumes boxed. $25.00 the set.

Too commonly, criticisms of Freudian formulations have been made by those who do not fully understand what Freud was about. Many writers have read largely in secondary sources; some have read Freud's crystallized formulations in his major books which represent only resting points in years of preparatory work and future development. Most of these major source materials provide dated images of Freudian theory or cross sections which can only erroneously be taken as *the* theory, fixed, immutable and final.

To perceive psychoanalytic theory independently of the temporal dimension is to misunderstand Freud himself and what he sought to do. It is to struggle with phantoms long ago laid to rest or to represent a complex curve with one or two coordinates. For Freud, psychoanalytic theory and practice were never presented as a completed system. His formulations were hesitant and tentative gropings toward making sense of nonsense and coherence out of heterogeneity, subject to empirical scrutiny and thoughtful modification. To comprehend Freudianism requires one to follow the vicissitudes of Freud himself, his speculations, blind alleys and backtracking, and his uncertainties as well as his convictions. As with most creative persons, his professional contributions represented continuous restless impositions of his personal strivings upon his chosen medium. Like the artist, musician, poet and scientist, Freud wrestled with external phenomena as *representations* of his own inner tensions. The tentative solution of a technical or theoretical problem was a manifestation of a stage of his own inner growth.

The most solid understanding of Freud's contribution comes with reading him ontogenetically, so to speak, following him historically as he formulates and reformulates. To grasp his theory means to see the nature and directions of his changes as well as any formulation.

The five volumes of his collected papers published originally by Hogarth Press and the Institute of Psycho- Analysis were a boon to many persons in the psychological fields for whom Freud's original writings have become essential reference material. Basic Books has now made evailable the first American edition, using the Hogarth plates. The editions are identical excepting for a more attractive cover and a smaller size in the American than the British edition. Translations are by Joan Riviere and Alix and James Strachey under the editorship of Ernest Jones and the aegis of the London Institute of Psycho-Analysis.

It seems needless to "review" Freud's writings at this time: these books have been reviewed and rereviewed and their contents evaluated, modified and digested into the body of psychoanalytic knowledge. Those who have the papers treasure them as a mine of trenchant clinical observation, flexible theorization, provocative inductive leaps and vigilant empirical investigation and as an impressive case study in creative thinking.

The papers provide a kind of autobiographic history of Freud's intellectual struggles, formulations and development from 1888 to 1938. They serve as a basic framework for evaluating the major "finished products" represented by his books, the thinking behind the theory and practice.

The volumes are organized as follows:

Volume 1: Early papers, etiological and diagnostic considerations, therapeutic methods, and history.

Volume 2: Clinical papers and techniques of psychoanalysis.

Volume 3: Case histories such as the classic cases of Dora, Hans and Schreber.

Volume 4: The most valued contributions are the eight studies in metapsychology which describe the essences of the theory of psychoanalysis as a system of psychology. In addition there are 14 papers dealing with broader isses such as characterology, love, esthetics, object choice and war.

Volume 5: The miscellany ranges over the wide field of knowledge which Freud considered his ambit, brief case notes, fragments of his musings, elaborations of technical and theoretical points, clarification of newly perceived clinical observations and literary speculations.

Although it should be unnecessary to mention, these volumes belong, dog-eared, on the shelves or desks of every serious clinician and student of human behavior.

Bertram R. Forer
Executive Editor,
Journal of Projective Techniques

Holt, Robert R. and Luborsky, Lester, with the collaboration of William R. Morrow, David Rapaport, & Sibylle K. Escalona.

Personality Patterns of Psychiatrists. (Menninger Clinic Monograph Series, No. 13.) Vol. I: *A study of methods for selecting residents.* New York: Basic Books, 1958. Pp. xiv+386. $7.50. Vol. II: *Supplementary and supporting data.* Topeka, Kan.: Menninger Foundation, 1958. Pp. xiv+400. $4.00.

The cost of training one psychiatrist comes high, perhaps as high as $30,000. There is no way of telling the cost to society of choosing the wrong man for psychiatric training. Yet, psychiatric training centers have generally relied on fairly crude, relatively untested selection criteria, partly because demand exceeded supply of applicants, but partly, too, because so little was really known about the accurate prediction of psychiatric competence. The purpose of this book is to put the selection of psychiatric residents on a sounder basis. Robert R. Holt, now Professor of Psychology at New York University and Director of the NYU Research Center for Mental Health, was formerly Director of the Psychological Staff at the Menninger Foundation. Lester Luborsky, a psychoanalyst, is Senior Psychologist in the Research Department of the Menninger Foundation. The research on which this book is based was carried out while both men and their collaborators were all at the world's largest psychiatric training center, The Menninger School of Psychiatry.

After appropriately lengthy worry over the criterion problem, it was decided that the major criteria would be based on supervisors' evaluations of overall competence, and competence in the more specific areas of psychotherapy, diagnosis, patient management, and administration. These, and over a dozen minor criteria were shown on factor analysis to yield just one major factor: essentially, overall competence.

Three major studies were carried out. The first, with an N of over 200, was designed to assess the effectiveness of the selection procedure actually in use at the Menninger School. While the final decision to accept or reject a candidate was made by the Admissions Committee, each candidate was assessed by several (usually three) psychiatric interviewers and by means of a psychological test battery. It was found that the pooled ratings of three interviewers predicted overall competence about as well (or poorly) as did the psychologist's ratings (r about .25). The Admissions Committee, as a whole, fared somewhat better, partly because they had more data and partly because they were in a better position to weight properly the various clinicians' evaluations.

The second major study was based on a small sample (N of over 30) of highly-rated, medium-rated and low-rated residents. The purpose of this study was to develop a battery of predictors which would differentiate better from poorer residents. The methods showing some promise as differentiators included: analysis of application materials (credentials), the structured interview, TAT, TAT self-interpretation, Rorschach, Picture Reaction Test (unpublished), Wechsler Form I, and Word Association. For most of these methods complex manuals were developed to guide the judges toward more reliable predictions.

The third study (with an N of about 65) was a cross-validation of the promising predictors gleaned from the small sample study. In order to learn more about the optimal type and number of methods in a predictive battery, and to check the effect of different orders of presentation of data, a quasi-latinized design was used. Each of the four predictive judges began with a different method, made predictive ratings based on that method, then went on to the next method, made predictions based on both the first and second methods, etc. Unfortunately, only two of the judges made predictive ratings based on all of the methods. Because there were more methods than judges, the design was in other ways incompletely balanced. Within the limitations of number of judges and money available it might have been more valuable to have used fewer of the instruments but so balanced among judges that more useful conclusions might have been drawn. After the large investment of time and funds in the enormous task of gathering criterion data and selecting predictive instruments, it seems reasonable to hope that time and funds may become available to permit an extension of this study. Ideally, enough experienced, cooperating clinicians could be found to have each use all methods but in different sequences. More reliable answers would then be available to such questions as: what method or battery is best, what number or sequence is best in the prediction of psychiatric competence.

All we can say for the *clinical* predictions is that one of the two predictive judges using all of the data available to him was able to improve prediction over the pre-research level while the other was not. Nevertheless some very promising leads emerge. The most interesting and least expected was the finding that a judge's rating of how well he liked a resident (a rating introduced to check on halo effect) predicted competence better than almost anything else. The Wechsler Verbal I.Q. predicted (r = .39) competence better than did the School's regular testers using a test battery. Because of the highly selected nature of psychiatric residents, all of the correlations are naturally lowered. An example of this can be seen here, where the above r of .39 becomes .75 when corrected for restriction of range by one of the Pearson formulae. Another valuable finding was that properly interpreted application materials (credentials) could yield predictions more accurate than those based on three psychiatric interviews, a far more expensive method of assessment. Surely, the technique of credentials analysis deserves further study because of its implications for the selection of students, internes, staff and faculty in psychology and other professions. Some of the other methods, notably the Rorschach, did not prove very useful in predicting psychiatric competence.

A particularly fruitful part of the book is the detailed discussion of sources of errors in the prediction process. Being overimpressed by superficial warmth, attractiveness and poise is pointed out as a common reason for overestimating candidates. Underestimating candidates was risked in the use of projective techniques. These tended to point up problem areas without suggesting how the problems and conflicts uncovered might manifest themselves. With the clinician's undue emphasis on pathology, residents tended to be too often diagnosed as "sicker" than they actually were.

A bonus study included is a survey of expert opinion of personality requisites of psychiatrists, which might be equally applicable to psychoanalysts and other psychotherapists. From their cross-validation data, the authors were able to shed considerable light on what personality characteristics are associated with highly-rated or low-rated residents. In general, the expert opinions given on the basis of experience were corroborated by the research data. There was enough disagreement however so that further research was deemed necessary.

Based on their research findings, their clinical experience, and specifically, their experience as members of the Menninger Admissions Committee, the authors come up with a set of practical recommendations on how to select psychiatric residents and how to do research in this field, that are probably the most valuable of any available. These recommendations may be as helpful to other mental health professions as they will be to psychiatrists.

Volume I contains enough details of design and results so that Volume II is optional. The latter is a volume of appendices which round out some of the discussions and present data in greater detail. The serious student will want this volume as well. In appearance, Volume I is attractive while Volume II, lithoprinted and paperbound, fares less well. It suffers from typographical errors over and above those listed in a full page of errata provided by the printer. In Volume I, p. 155, we are referred to Volume II, Appendix 10.9 which is nowhere to be found. Volume II, p. 208, refers us to Table 12.2 which also is absent (apparently Table 12.4 was intended). Other typographical errors occur on pages 107, 231, 232, 234, 270, 286, and 328.

While the proofreading was casual, the scholarship was not. The book rests solidly on the actuarial tradition of prediction as well as on the clinical. The more *actuarial* research in predicting academic, marital, parole, and vocational success is well reviewed, as is the more *clinical* prediction research, in the tradition of Murray's work at Harvard, the OSS work, and Kelly and Fiske's study of clinical psychologists. The question of clinical *vs.* statistical prediction, on which Holt has recently written elsewhere, is raised again. Predictably, this issue has still not been laid to its well-deserved rest.

Well-written, often fascinating, there are nevertheless some exasperating moments for the reader as when research designs change, Ns fluctuate, and excellent intentions become part of the paving of that well-known road. Most of the changes in design were essential: it was usually a case of compromise the design or scotch the project. The reviewer, for one, is glad the design was compromised.

This book should be of special interest to workers in the mental health field. Prediction researchers and those practically concerned with the selection and training of clinical students and staff will find this book invaluable. To the graduate student in clinical psychology (with his all too-frequent disdain for research) this book may have a special value. It may help him to learn that research need not be dull nor mechanical, that knowing something of research methods and statistics need not detract from his clinical acumen, and perhaps, most important, he may learn what Edward Tolman has been saying for a long time: that research is fun and has "absolutely no dull moments".

It is no small tribute to this book that from it dozens of research projects suggest themselves. It should be interesting to wait a decade or so and compare the data available on those psychiatrists who have since become eminent against those who have not (a sort of psychiatric counterpart to Ken Clark's *America's Psychologists*). Also, knowing now how psychiatrists do on various projective and non-projective assessment methods, what do other medical specialists do? How are they different from psychiatrists? Are the characteristics associated with competence different for the various medical specialties? But that indeed would be another book!

ROBERT ROSENTHAL
University of North Dakota
Grand Forks, North Dakota

GENERAL NEWSLETTER

Hofstatter, Peter R. & Lubbert, H. Die Eindrucksqualitaeten von Farben. *Zeitschr. f. diagnost. Psychol.*, 1958, *6*, 211-227.

A reappraisal of the dimensionality of color-perception as manifested in the Color Pyramid Test.

Lienert, G. A. & Matthaei, F. K. Die Konkordanz von Rorschach-Ratings. *Zeitschr. f. diagnost. Psychol.*, 1958, *6*, 228-241.

A study of inter-rater agreement in ratings of intelligence, emotionally, and social adaptation as seen in the Rorschach.

Newman, R. E. Personality development in a primitive "adolescent" group. *Zeitschr. f. diagnost. Psychol.*, 1958, *6*, 241-253.

The stress and rebellion characteristic of American and European adolescents are absent among the Otomi Indians of Mexico when the Rorschach is used as the criterion.

Bambaren Vigil, Carlos. La prueba de la "Gestalt", de Bender, en esquizofrenicos. *Revista de Psicologia general y aplicada*, 1958, *13*, 481-509.

Sample of 100 schizophrenic adults and 100 controls are compared on the Bender-Gestalt by means of Pascal and Suttell's method.

Figuerido Torija, C. A. and Figuerido Santurtun, J. A. El test de Szondi en el estudio de la impotencia neurotica. *Revista de Psicologia general y aplicada*, 1958, *13*, 523-534.

Case studies of impotence by means of the Szondi.

Ellenberger, Henry. La vida y la obra de Hermann Rorschach. *Revista de Psicologia general y aplicada*, 1958, *13*, 561-615.

Biographical sketch of Rorschach with a discussion of his works.

Dalma, Juan. Utilidad y posibilidad de un censo psiquico integral de la poblacion. Su importancia en las investigaciones de salud mental. *Archivos de Criminologia,Neuro-psiquiatria y Disciplinas conexas*, 1958, *6*, 553-570.

The author presents a proposal for investigating the psychological adjustment of his country through a sampling procedure and the use of the Kent E.G.Y., the Porteus mazes and Mira's Myokinetic method.

de Zeeuw, J. *Colour preference in psychodiagnosis.* The Hague: Staatsdrukkerij-en Uitgeverijbedrijf, 1957.

The author summarizes the literature on the psychodiagnostic implications of color preferences, develops a test and provides a good deal of normative material. The findings are presented in both a book printed by the above publishing house and a brief monograph which summarizes his work.

Chiari, Silvano. Percezioni globali e contenuti su protocolli Rorschach di fanciulli. *Rassegna di Psicologia generale e clinica*, 1957, 2, 150-173.

A normative study of the content of Rorschach W responses in children.

Biondi, Luigi. Studio dello psicogramma Rorschach di fanciulli epilettici con accentuate turbe comportamentali nel senso dell'instabilita-aggressivita. *Rassegna di Psicologia generale e clinica*, 1957, 2, 174-197.

A statistical and case study of the Rorschachs of epileptics.

Zecca, Graziella. Il fenomeno della perseverazione nel Rorschach infantile. *Archivio di Psicologia Neurologia e Psichiatria*, 1957, *18*, 27-38.

A theoretical and case-oriented consideration of developmental forms of perseveration on the Rorschach.

Zecca, Graziella. Alcuni aspetti della risposte di colore nel Rorschach infantile. *Archivio di Psicologia Neurologia e Psichiatria*, 1957, *18*, 1-18.

A theoretical and clinical consideration of kinds and meanings of color usage in children's Rorschachs.

Zecca, Graziella. Alcuni aspetti della risposte di chiaroscuro nel Rorschach infantile. *Rassegna di Psicologia generale e clinica,* 1957, *2,* 198-207.

A theoretical discussion of the significance of shading responses in children's Rorschachs.

Ramachandra Rao, S. & Ramadevi, T. Situational analysis of T A T responses. *J. All-India Inst. mental Health,* 1958, *1,* 18-25.

A set of T A T pictures designed for an Indian population was used to explore the applicability of Lewin's topological psychology to analysis of T A T stories.

Pareek, Udai. Studying cultural differences in personality development with the help of Rosenzweig P-F Study. *J. All-India Inst. mental Health,* 1958, *1,* 113-123.

Differences in Rosenzweig P-F performances among Indian, Japanese and American children are described.

ANNOUNCEMENTS

WORKSHOPS

ANNUAL WORKSHOP IN PROJECTIVE DRAWINGS

The 1959 Annual Workshop in Projective Drawings, to include H-T-P, Draw-A-Person, Draw-A-Family, the Unpleasant Concept Test, Draw-An-Animal, the Eight Card Re-Drawing Test, and doodles, will be conducted at the New York State Psychiatric Institute, New York City, this year by Emanuel F. Hammer, Ph.D. and Selma Landisberg, MA., on July 27-30, from 9:30 A.M.-12 P.M. and 1:30-3 P.M. daily.

The workshop will provide a grounding in fundamentals, and then go on to advanced considerations of differential diagnosis, psycho-dynamic appraisal, psychological resources as treatment potentials, and the application of drawings in therapy. The text, *The Clinical Application of Projective Drawings*, Charles Thomas, Publisher, Springfield, Illinois, is suggested as preparation for the workshop.

For information as to admission or requirements, write to: Miss Selma Landisberg, 116 East 35th St., N.Y. 16, N.Y.

A Workshop in Projective Methods for the Study of Personality is scheduled this summer, June 22-August 6, at The New School for Social Research in New York City under the direction of Florence R. Miale and Camilla Kemple. Two courses meeting daily except Friday will offer introductory and advanced work in the Rorschach method. Classes meet from 6:20 to 8:10 P.M. and graduate credit is granted through the Graduate Faculty of The New School.

The introductory course will be given from June 22-July 14; the advanced course begins July 15 and runs through August 6. Registration opens June 15 and runs through June 25.

Inquiries may be addressed to the Department of Psychology, Graduate Faculty, The New School for Social Research, 66 West 12th Street, New York 11, N.Y.

PRESS RELEASE

"The Management of Transference" is the topic of the next professional meeting of the Council of Psychoanalytic Psychotherapists, Inc. In keeping with the Council's philosophy, the topic will be discussed by speakers from different schools of psychoanalysis.

Following an opening statement prepared by the Program Committee on "Manifestations of Transference", Mr. Milton Kapit will present the point of view of classical Freudian analysis, Ivan Wentworth-Rohr, Ph.D., will present the approach of the cultural-interpersonal school, and Helene Papanek, M.D., will discuss the Adlerian viewpoint. Discussion by the audience will follow, led by Rudolph Wittenberg, MSS, Chairman of the Program Committee.

The meeting will be held on Saturday, June 13, 1959 at the Carnegie Endowment for International Peace, United Nations Plaza at 46th Street, New York City, and will be followed by a Dutch treat cocktail party. All people in the field of psychoanalysis and psychotherapy are invited to attend.

Dr. Arthur Burton has a 700-item bibliography on psychotherapy called *A selected Bibliography of the Technique of Psychoanalysis and Individual Psychotherapy: 1952-57* available to interested Society members in limited quantities. The mailing cost is 25c. The bibliography includes appropriate foreign language references for the period covered, and classifies items on a child-adult dichotomy as well as by year of publication. It is intended for students of psychoanalysis and psychotherapy. It can be obtained by writing to him at 207 Porter Building, San Jose, California.

The International Committee has requested that authors of articles published in the Journal of Projective Techniques be invited to donate reprints to the circulating library of the International Council of Women Psychologists, in care of Dr. Dorothea Ewers, 745 Aberdeen Drive, Crete, Illinois. The Council will cite each reprint in its newsletter, which is distributed to members in thirty-six countries.

BOOKS AVAILABLE FOR REVIEW

The following books are available for review. If you wish to volunteer, please write to Bertram R. Forer, Ph.D., 2170 Live Oak Dr., East, Los Angeles 28.

Bellak, L., Ostow, M. Pumpian-Mindlin, E.

Stanton, A. H., and Szasz, T. S. *Conceptual and methodological problems in psychoanalysis.*

Caligor, Leopold. *A new approach to figure drawing. (The Eight Card Redrawing Test).*

Delay, J., Pichot, P., Lemperiere, T., and Perse, J. *The Rorschach and the epileptic personality.*

Harrower, Molly. *Personality change and development.*

Bass, B. M. and Berg, I. A. *Objective approaches to personality assessment.*

Helman, Zena. *Rorschach et electroencephalogramme chez l'enfant epileptique.*

Hess, R. D. and Handel, G. *Family worlds: a psychosocial approach to family life. (TAT and sentence completion methods).*

Magnusson, D. *A study of ratings based on T A T.*

Orr, Mirian. *Le test de Rorschach et l'imago maternelle.*

Szondi, L., Moser, U., Webb, M. W. *The Szondi Test.*

Tompkins, S. S. and Miner, J. B. *Picture Arrangement Test interpretation.*

SPECIAL BACK VOLUME OFFER

Because of the demand for earlier out-of-print volumes of the Journal of Projective Techniques, a limited number have been reprinted* We are now in a position to make the following specially-priced offer.

Set of ten volumes: 11 through 20 (1947-1956)	$50.00	(Foreign $55.00)
Volumes 11 and 12 combined	$ 6.00	(Foreign $ 6.50)
All later volumes individually	$ 6.00	(Foreign $ 6.50)
Current subscription	$ 8.00	(Foreign $ 8.50)
Monograph No. 1 "Projective Techniques and Psychotherapy" by William Lundin	$1.50	($1.00 with set)
Monograph No. 2. "Manual for Make-A-Picture-Story (MAPS) Method" by Edwin Shneidman	$2.50	($2.00 with set)

---

* The first ten Volumes published in mimeographed form under the title, "Rorschach Research Exchange" are now available in photostatic or microfilm reproduction through National Library of Medicine, 7th St. and Independence Ave., S.W., Washington 25, D. C.

ORDER BLANK

Society for Projective Techniques and Rorschach Institute, Inc.
Adelphi College
Garden City, N. Y.

Enclosed find $_____________for the following order:

_______sets of Volumes 11 through 20 at $50.00 (Foreign $55.00)

_______sets of Volumes 11 and 12 at $6.00 (Foreign $6.50)

Volumes_________________________of Volumes 13 through 20 at $6.00 per volume (Foreign $6.50)

_______Monograph No. 1 at $1.50 (with sets of 10 volumes $1.00)

_______Monograph No. 2 at $2.50 (with sets of 10 volumes $2.00)

_______Current subscription $8.00, foreign $8.50.

Name: (Please print)_________________________

Street_________________________

City_________________ Zone__________ State__________

JOURNAL OF PROJECTIVE TECHNIQUES

VOL. 23 SEPTEMBER, 1959 NO. 3

• • •

EDITOR

BRUNO KLOPFER

EXECUTIVE EDITOR

BERTRAM R. FORER

ASSOCIATE EXECUTIVE EDITORS

WALTHER JOEL
JEANNE M. REITZELL
EDWIN S. SHNEIDMAN

STAFF EDITORS

EVELYN CRUMPTON
FLORENCE DIAMOND
NORMAN L. FARBEROW
HERMAN FEIFEL
FRED J. GOLDSTEIN
JAMES HOLT
NICHOLAS ROSE
LEONARD B. OLINGER
JOHN WEIR
IRLA LEE ZIMMERMAN

CONSULTING EDITORS

JOHN E. BELL
EUGENIA HANFMANN
ROBERT R. HOLT
LOIS B. MURPHY
MARIA A. RICKERS-OVSIANKINA
L. JOSEPH STONE

Symposium: Current Aspects of the Problem of Validity[1]

Suggestions For the Delineation of Validational Studies

EDWIN S. SHNEIDMAN
V. A. Center, Los Angeles

This symposium on "Current Aspects of the Problem of Validity" is sponsored both by the Division of Clinical Psychology and the Society for Projective Techniques. Our topic relates to one of the most timely issues that might have been selected by either group. It is one that is important to our practice and fundamental to our science. As chairman, my own contribution to this symposium is one that might be called "A Fugue and Variations on a Four-Part Invention by Cron-bach," and is essentially a suggested modification of the types of validity formulated by Cronbach's APA Committee on Test Standards in 1952.

One hardly needs to reiterate that the APA Committee on Test Standards proposed four types of validity, as follows:

1. "Predictive validity, which denotes correlation between test measures and *subsequent* criterion measures.

2. "Status validity, which denotes correlation between the test and *concurrent* external criteria.

3. "Content validity, which refers to the case in which the specific type of behavior called for by the test is the goal of teaching or some similar activity, as in an academic achievement test.

4. "Congruent validity which is established when the investigator demonstrates what psychological attribute a test measures by showing correspondence between scores on a test and other indications of the state or attribute. This type of validity is used for tests intended to measure a construct arising from some theory; the validation consists of evidence that the scores vary (from person to person or occasion to occasion) as the theory would imply. Essentially, in congruent validity the meaning assigned to test scores is substantiated by demonstrating that scores are consistent with deductions from the theory from which the meaning derived. This validation process is much the same as that involved in evaluating a theory itself."

My own suggested modification is essentially a spelling out of the several dimensions involved in any validational study. I think that I might go so far as to propose that each of these be indicated at the beginning of any validational study. The headings I suggest are as follows:

1. Validity for *whom,* in which (a) the subjects, (b) the examiners, and (c) the judges would be described. It makes a lot of difference, for example, whether the 700 Rorschachs being reported in a normative matching study were given to Columbia sophomores or Columbian peasants; whether the examiner was an ABEPP grandfather or his comely young granddaughter, and whether the judges were tyros or Tyroleans. This notion is, of course, a sort of tautology in that it begs the question of what are the relevant dimensions in terms of which the subjects, examiners, and judges need to be described.

2. Validity for *when,* in which one (or more) of the three logical temporal positions would be indicated: past, present, and future. Correlations with future criteria are, of course, called *prediction,* and with past criteria are called *postdiction*. For correlations with more-or-less present criteria (such as "present status") I

---

[1] Symposium presented at the American Psychological Association Convention, Washington, D. C., August 30, 1958.

have suggested the term *paridiction,* from the word "equal".

3. Validity for *which*. Under this rubric one should indicate whether correlations are with essentially *factual* variables or with essentially *conceptual* variables. This category again begs the question because it is precisely in this area that most of our problems concerning validity reside. There are, in clinical psychology, relatively few "facts", if we define a fact as a perception about which several intelligent lay people would instantaneously concur. When we view a body lying in a pool of blood and see a holographic document with suicidal content, it is a "fact" (Alfred Hitchcock aside) that the individual has committed suicide; but in a not-yet-dead individual "being suicidal" is almost entirely conceptual. Most of what we deal with in clinical psychology are not facts but hypothesis-tinged data.

4. Validity for *what*. Under this heading it is suggested that (a) the nature of the stimuli be delineated, and more, that (b) the nature of the continua or dimensions along which the stimuli are believed to be spread be delineated. Dr. Farberow will in his paper expand on this notion and indicate some of the theoretical and practical implications of developing specific psychological testing techniques which focus on the elaboration of stimuli along a single psychological dimension.

5. *How* Validity is established. This would be an indication of the basic statistical procedures involved. What I have in mind is the notion that it is not only what the statistics choose to tell, but is also in part which statistical procedures were chosen. Clinically this means that even the statistician must be aware of his own trends toward latent homoscedasticity.

But it is to the notion of congruent validity of tests, and the idea that the validational process is much the same as that involved in evaluating a theory itself, that I wish to return for the remainder of my introductory remarks, and make the to-me-obvious, but I fear in some circles somewhat iconoclastic comment that our psychological tests or projective techniques are not validatable until the personality theories that give them their intellectual permissiveness themselves gain greater construct validity.

And that is not all. The matter is further complicated inasmuch as the data on the other side of the equation, the so-called criterion measures, are themselves extremely complex and little understood. Let me give two examples, using homicide and schizophrenia—I had promised that I would not dwell upon either suicide or the MAPS test during my presentation. On the first thought it would seem impressive if one were to have not ten, but 200 Rorschach records of individuals who had committed homicide and records of 200 individuals who had not. But a moment's reflection will lead one to the common-sense consideration that individuals kill other individuals in a variety of ways (in a liquor-store hold-up, in the lover's bedroom, on the highway, on the field of battle, etc.) —and that *each* of these occurs with a variety of motives and mixed feelings. Putting all the "homicidal" records together could only yield a kind of psychometric goulash. (Incidentally, suicide is even more complicated.) And, now let us, for a few moments, consider schizophrenia—at first blush a perfectly wonderful external criterion for status validity. Whose schizophrenia do we mean? How shall we define schizophrenia?

1. Is schizophrenia as Kraepelin believed, a mental disease process resulting from an auto-intoxication following a disorder of metabolism produced by a disordered secretion of the sex glands?

2. Or is it, from Arieti, a primitive form of rationality, based on pathological reasoning in terms of attributes of the predicate?

3. Or, from Alexander, is it a state

in which the ego loses its synthetic function of harmonizing the different instinctual demands?

4. Or, from Jung, does the peculiarity of this disease lie in the startling emergence of an archaic psychology accounting for the innumerable points of contact with mythological material, so that what we take for original and individual creations are mostly products which can only be compared with those of antiquity?

Incidentally, Jung states that there are two types of schizophrenia (asthenic and spastic), Beck says there are six, and I had been taught all along that there are really four.

5. Or, is schizophrenia, as Meyer felt, to be thought of as a habit disorganization resulting from a progressive maladaption with increasing use of substitute reaction, instead of effective ones.

6. Or, do we really understand schizophrenic delusions as a projection of repressed passive homosexual desires? I think the formula is as follows: I love him, I do not love him, I hate him, No he hates me. Now I have it, I hate him because he hates me. We hate each other, I don't think that I will invite *him* to my next gay party.

All these are concepts. But there are, happily, three solid facts about schizophrenia. The only three known facts about schizophrenia are:

1. We do not know exactly how to cure it; its remediation is unknown.
2. We do not know exactly what causes it; its etiology is unknown—except when we say that it is cryptogenic.
3. We do not know its nature. We do not know what it is, if it is an it, which it probably ain't.

In 1958, we in clinical psychology (and individuals no less in psychiatry) have to deal primarily with the methological problems attendant to *construct* validity.

Our task is in some way similar to measuring a floating cloud with a rubber band—in a shifting wind. I used to hear that projective techniques were like taking a plug out of a watermelon. This is a delusion of agronomy.

The science of clinical psychology relates primarily to hypotheses, not to facts. Whether one believes in Freud's, Adler's, Jung's, Murray's, Allport's, Kelly's, or any other individual's personality theory, one still has to subsume his cerebrations under the purview of an essentially untested hypothesis, nothing more. As a clinician, an individual may (in terms of loyalty) be from Vienna, or Topeka, or Baltimore; but as a scientist he must be from Missouri.

Nor do I believe that the physical sciences should be our models. My notion is that we do not do well to attempt to emulate physicists (simply because they have more observable facts interlaced among their hypotheses) but rather I suggest that we look *within* our own field, that we reexamine (with a view toward escaping the tactical and strategic errors of theory-building) the intellectual maneuvers of Wundt, Titchener, Dewey, Watson, MacDougall, etc., not to go back to them, but better to see that they were only trying systematically to explore the implications of *their* hypotheses — all their "facts" followed after. Our task might well be to plan our scientific maneuvers so that even if we adhere more or less rigidly to our current hypotheses, at least learning from *our own* past, we might avoid making some of the methodological errors which beset these earlier movements.

It appears that the kinds of validity discussed by the APA committee and by others are all kinds of "research" or scientific validity, whereas it may be that we may have to deal for a while with faith validity or clinical validity wherein we are not concerned with the veridical value of a hypothesis but rather with its professional sense-appeal within the scope of our contemporary conceptual zeitgeist. But on the other hand, it seems that our notions *ought* to be capable of being metricized so that we can test whether or not the phenomena we think we see, occur beyond chance expectation and with statistical significance.

In order to end on a positive note, I want to say that as a meaningful measure of the nature of the unconscious nothing beats our current projective techniques, whatever the unconscious is—if you see what I mean.

Received December 8, 1958.

Variability of Responses and the Stability of Scores and Interpretations of Projective Protocols

DONALD W. FISKE
University of Chicago

The literature on projective tests contains very little information on the consistency of responses. Very little is known about the stability of responses to the same stimuli at different times and almost nothing is known about the stability of interpretations of such different protocols.

This paper is concerned primarily with these problems. We shall see that responses to the same stimuli tend to be different on different occasions and that such instability of response seems to have serious effects on the stability of interpretations. On the other hand, some scores or ratings derived from successive protocols show fair stability.

From work on the variability of a person's behavior over time, I have come to the postulate that behavior in the absence of external stimulation is completely variable. The more structured the stimulation and the more intense the stimulation (up to a point), the more consistent the behavior. Stimuli exercise constraints on behavior (7).

This position is strongly supported by several kinds of evidence. First let us consider dreams as an example of "behavior" of a sort, behavior in the absence of stimulation.

In the systematic work of Kleitman, Dement, Wolpert, and Kamiya (4), all the dreams a person has during a night are recorded immediately after they occur. For a number of subjects, the dreams of several nights have been recorded. Inspection of these shows no exact repetitions. The content of each dream is essentially unique although one can, of course, find instances of similar themes or the development of a theme, especially in contiguous dreams. Much of the repeating material is associated with the experimental situation[1]. Thus one subject had several dreams, usually the first each night, about the situation, the electrodes, etc. Another had two dreams about people slanting or biasing the dream material they reported. It is worth noting that the general topic of these reported dreams is common across subjects and is largely determined by the general experimental situation.

Another systematic collection of protocols in the relative absence of stimulation is in the work of Rechtschaffen and Mednick (20) on the autokinetic word technique, in which it is suggested that the fixed point of light will trace letters, words, or sentences. Here also, there is no exact repetition of content.[2] Reports from stimulus deprivation studies seem to be consistent with these data. In a study by Goldberger and Holt (10), subjects' verbalizations during an eight hour period of marked stimulus reduction were recorded. Inspection of these protocols, and of post-session interview reports of experiences during the experimental period showed minimal repetition of content.[3] There were two types of exceptions: two subjects repeated the same tune twice; some subjects, especially those who were anxious to escape the situation, repeated content such as wondering what time it was and wondering how he looked as he lay there. The latter type of repeated material related to the situation is strikingly consistent with the repeated dream material noted above.

---

[1] I am indebted to Drs. William Dement and Joe Kamiya for access to these dream protocols.

[2] I am indebted to Dr. Allan Rechtschaffen for access to these protocols.

[3] I am indebted to Drs. Robert R. Holt and L. Goldberger for access to these protocols.

When relatively unstructured stimuli are present, behavior is more consistent than in the absence of stimulation, but it is still highly variable. One implication of this viewpoint is that a person has a very wide distribution of potential responses, the width or range of the distribution being greater when the stimuli are less constraining. Since projective techniques are rather unstructured, the stimuli and instructions impose relatively little constraint on responses.

Thus Bert Kaplan and his colleagues have found that on a second testing, normal people can give almost as many *new* responses to the Rorschach cards as they gave the first time (28). In a study by Willis (29), subjects gave an average of four or five different plots (themes) to a TAT card in 10 minutes. I have found that subjects can give several responses to each sentence completion stem.

While this evidence is not definitive, I am sure most of you would agree with the notion that a projective stimulus at any point in time for a single person has several potential responses, with varying response strengths. Now what is the evidence on the variability of emitted responses over time?

For word association, Willis and I have some preliminary data indicating that almost one-third to one-half of the responses are changed when the same stimulus word is repeated in a single session or in a second session. (We asked subjects to give two associations to each stimulus. Fifty to 85 per cent of the second associations are changed.)

For sentence completion responses, three studies show that 64% to 80% of the responses are changed from one trial to the next (8, 18, 19). In one study, subjects averaged six or seven different responses over nine trials.

The TAT does not permit similar comparisons. However, I have examined some sets of protocols, each set consisting of three trials 1 to 30 months apart. Rather than estimate similarity, I counted the number of times that the three stories the person told to a card were quite different, one from the other, in manifest content. This occurred in about 20% of the subject-card combinations. In the remaining 80%, the similarity ranged from two stories having one detail in common, which did not appear in the third, to sets of three almost identical stories. Some of the repetition was obviously straight recall, as one subject made explicit who "saw" each time in the blank card a polar bear in a snowstorm!

Swift (24) reports that about 50% of Rorschach responses by 4 and 5 year old children are repeated 2 to 4 weeks later. Siipola, Kuhns, and Taylor (22) indicate that for presentations of parts of these blots, about half the responses were changed on retest. Of these changed responses, about half were similar on the two occasions.

On the Blacky Test, Granick and Scheflen (11) have reported that judges considered that about 57% of the thematic content of two repetitions was similar, but a comparison with a matched group yielded one-third similarity between responses from different children!

For the Picture Arrangement Test, Tomkins and Miner report that 33% of the order responses were changed over a three week interval and 45% were changed over three years (26, p. 37).

The figures we have given are overestimates of response stability because there is much evidence that subjects remember many of their projective responses over several weeks (cf. Swift, 24).

The reader may be thinking that while the manifest content may be changed, the psychological meaning would be essentially the same. To check this, Van Buskirk estimated the changes in psychological meaning over the nine trials of the Sentence Completion data mentioned earlier. He found a high correlation (.80) between the extent of change in the psychological meaning of a person's responses and the extent of change in the manifest responses. But this was merely suggestive. So we compared the interpretations of different protocols from the same individual (9).

We asked this specific question: are the differences between the interpretations of protocols from the same person less than the differences between interpretations of protocols of different persons? Thus inter-individual variation, variation between individuals, provides a frame of reference for evaluating the extent of intra-individual variability, variation or inconsistency within a person over time.

We found that in 25% of the judge-protocol combinations, the interpretation was more similar to interpretations of protocols from different subjects than to interpretations of other protocols from the same subject. This 25% misclassification was not due to the homogeneity of the subjects. The manifest content differentiated the subjects better than the judges' interpretations.

Once again, such a single study is not definitive. It should be repeated with other tests and with complete batteries. It does, however, suggest that the changes in manifest content on at least one projective test make the interpretations clearly unstable over time.

I hope that the material I have presented has indicated to some of you that the existence of considerable variability over time in projective responses presents a serious difficulty for clinical diagnosis and for personality assessment as a whole. But the picture is not entirely negative: there is considerable evidence that some characteristics of responses are reasonably stable over time.

For example, for the Incomplete Sentence Blank, Arnold and Walter (1) found the Rotter Adjustment Score to have a stability over a week of .82. Churchhill and Crandall (3) report coefficients of .70 to .38 for 6 month to 3 year intervals. Rohde (21) found stability coefficients of .68 and .64 (over an eight month period) for need variables rated on her Sentence Completion Test. The cathections of objects were even more stable: less than 4% were changed. For the TAT, Tomkins (25, p. 6) reports r's from .50 to .80 over two to ten months for ratings using a need-press schema. For a two-month interval, Lindzey and Herman (16) report 17 r's ranging from .00 to .94. For a similar period, Helen Koch[4] has obtained a comparable range of coefficients on the CAT. In the Granick and Scheflen study (11) of the Blacky cited earlier, 75% of the subjects were consistent in their liking or disliking of each Blacky card. For the Sargent Insight Test, Fassett (6) reports several coefficients all below .46. Rorschach scores have stabilities from .98 to −.16 (5, 12, 13, 24). In some unpublished Draw-a-Person test data of Shanan[4] the correlation between total area used for two figures over a six month interval is only .44. This is similar to the only correlations reported in Swensen's review of the literature on the test (23). The evidence for the stability of characteristics of such drawings is not impressive, but Wagner and Schubert (27) cited by Swenson (23, p. 435), report a coefficient of .86 for the stability of ratings of overall quality.

Many of these coefficients indicate that the scores involved are sufficiently stable over time to permit comparisons between groups. However, few are high enough for dependable use in differentiating individuals. There is a possibility that certain temperamental and expressive attributes have higher stability: for example, productivity as measured by word-count. Rechtschaffen[4] has obtained an r of .72 for the autokinetic procedure and Koch[4] found an r of .78 for the CAT.

---

[4] Personal communication.

But such characteristics are not unique to projective techniques and are certainly not the kind of variable which such techniques are designed to assess.

What does the total picture look like?

1. The actual content of responses to projective tests varies considerably from trial to trial, and there are large individual differences in the extent of this change in content.
2. The stability of *some* scores and ratings based on projective protocols is reasonably adequate.
3. There is reason to believe that changes of responses may have serious effects on the stability of interpretations of total protocols.

The problem is *not* that successive protocols are psychologically inconsistent but that they often complement each other; material in one may not be present in the next. The problem then becomes that of determining the significance of such material for the enduring personality.

One promising approach has been neglected, at least in research literature. This is Murray's suggestion (17, p. 604-5) of a unity-thema: a central theme; compounded from dominant needs and press, which can be seen to run through a person's life.

We need to investigate this notion. Does material from different sources —such as TAT and other thematic protocols indicate the same central theme? And do protocols gathered at different times embody the same thema?

We can safely assume that the "personality" we wish to assess and measure is that part of the person's dispositions and response tendencies which is stable, at least over weeks if not years. Therefore it is essential that we develop methods to distinguish between stable and temporary dispositions, between pre-eminent and subordinate response tendencies. I have found few explicit discussions of this problem (Rohde (21, p. 109); Lindzey (15); Bolgar (2); Klopfer and Spiegelman (14) and no development of adequate methods. It is my conviction that the validity of projective scores and interpretations will continue to be unsatisfactory until such methods are available.

REFERENCES

1. Arnold, F. C., and Walter, V. A. The relationship between a self- and other-reference completion test. *J. counseling Psychol.*, 1957, *4*, 65-70.

2. Bolgar, Hedda. A re-evaluation of projective theory. In Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R. *Developments in Rorschach Technique.* Volume II. Yonkers-on-Hudson, World Book Co., 1956.

3. Churchill, Ruth, and Crandall, V. J. The reliability and validity of the Rotter Incomplete Sentences Test. *J. consult. Psychol.*, 1955, *19*, 345-350.

4. Dement, W., and Wolpert, E. A. Relationships in the manifest content of dreams occurring on the same night. *J. nerv. ment. Dis.*, 1958, *126*, 568-578.

5. Eichler, R. M. A comparison of the Rorschach and Behn-Rorschach inkblot tests. *J. consult. Psychol.*, 1951, *15*, 185-189.

6. Fassett, K. K. A preliminary investigation of the Sargent Test. *J. clin. Psychol.*, 1948, *4*, 45-55.

7. Fiske, D. W. The constraints on intraindividual variability in test responses. *Educ. psychol. Measmt.*, 1957, *17*, 317-337.

8. Fiske, D. W. An intensive study of variability scores. *Educ. psychol. Measmt.*, 1957, *17*, 453-465.

9. Fiske, D. W., and Van Buskirk, C. The stability of interpretations of sentence completion tests. *J. consult. Psychol.*, 1959, *23*, 177-180.

10. Goldberger, L., and Holt, R. A. Experimental interferences with reality contact (perceptual isolation): I. Method and group results. *J. nerv. ment. Dis.*, 1958, in press.

11. Granick, S., and Scheflen, Norma A. Approaches to reliability of projective tests with special reference to the Blacky Pictures Test. *J. consult. Psychol.*, 1958, *22*, 137-141.

12. Holzberg, J. D., and Wexler, M. The predictability of schizophrenic performance on the Rorschach test. *J. consult. Psychol.*, 1950, *14*, 395-399.

13. Kerr, M. Temperamental difference in twins. *Brit. J. Psychol.*, 1936, *27*, 51-59.

14. Klopfer, B., and Spiegelman, M. Methodological research problems. In Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R. *Developments in Rorschach Technique*, Vol. II. Yonkers-on-Hudson, World Book Co., 1958.

15. Lindzey, G. Thematic Apperception Test: interpretive assumptions and related empirical evidence. *Psychol. Bull.*, 1952, *49*, 1-21.

16. Lindzey, G., and Herman, P. S. Thematic Apperception Test: A note on reliability and situational validity. *J. proj. Techniques*, 1955, *19*, 36-42.

17. Murray, H. A. *Explorations in Personality*. New York: Oxford, 1938.

18. Osterweil, J., and Fiske, D. W. Intraindividual variability in sentence completion responses. *J. abnorm. soc. Psychol.*, 1956, *52*, 195-199.

19. Raine, W. J., and Hills, J. R. Measuring intra-individual variability within one testing. *J. abnorm. soc. Psychol.*, 1959, *58*, 264-266.

20. Rechtschaffen, A., and Mednick, S. A. The autokinetic word technique. *J. abnorm. soc. Psychol.*, 1955, *51*, 346.

21. Rohde, Amanda R. *The Sentence Completion Method*. N. Y.: Ronald, 1957.

22. Siipola, Elsa, Kuhns, Florence, and Taylor, Vivian. Measurement of the individual's reaction to color in ink blots. *J. Pers.*, 1950, *19*, 153-171.

23. Swenson, C. H., Jr. Empirical evaluations of human figure drawings. *Psychol. Bull.*, 1957, *54*, 431-466.

24. Swift, Joan W. Reliability of Rorschach scoring categories with preschool children. *Child Developm.*, 1944, *15*, 207-216.

25. Tomkins, S. S. *The Thematic Apperception Test: the theory and technique of interpretation*. New York: Grune & Stratton, 1947.

26. Tomkins, S. S., and Miner, J. B. *The Picture Arrangement Test*: New York: Springer, 1957.

27. Wagner, M. E., and Schubert, H. J. P. *D. A. P. quality scale for late adolescents and young adults*. Kenmore, New York: Delaware Letter Shop, 1955.

28. Weiner, L., Brown, E., and Kaplan, B. A comparison of the ability of normal and brain injured subjects to produce additional responses on a second administration of the Rorschach Test. *J. clin. Psychol.*, 1956, *12*, 89-91.

29. Willis, V., Jr. The relationship of conceptual flexibility to personal adjustment. Unpublished master's thesis, Univer. of Colorado, 1958.

Received December 8, 1958.

Structured and Projective Tests: Some Common Problems in Validation

PAUL E. MEEHL
University of Minnesota

Some of us at Minnesota have been trying to re-think, as objectively as human frailty permits, the principles involved in the clinical use of that structured test with which we are identified.

In preparing for this symposium I discovered that most of the considerations which arise in validating such devices as the MMPI apply with very little modification to those open-ended tasks which have come to be known as the projective techniques. Faced with a choice between rigorously developing a point or two, and offering a more extensive list of suggestions in a brief and dogmatic form with only a sketch of justification underlying each, I have preferred the latter.

In terms of the recommendations of the APA committee on test standards, the great majority of validation problems posed by both structured and projective tests are problems of construct validity. Careful scrutiny of apparent cases of content or concurrent validity will usually reveal that these rubrics are only superficially appropriate. The most obvious example of this is in the use of tests as an aid in formal diagnosis, where there is no point in giving a test in order to predict the verbal behavior of the psychiatric staff. Think of the so-called "hits" and "misses" in a validation study employing routine psychiatric diagnosis as criterion. Almost the sole value of such investigations is their relevance in deciding whether the test can be used as a probabilistic indicator, along with psychiatric judgment or any other "criterion," of the presence of that inner state which is theoretically definitive of a particular taxonomic entity. An important minority of exceptions are those of truly predictive validity, (e.g. prognosis) although even here I would agree with Loevinger's recent emphasis that if predictive validity is to be generalizable over different clinical populations, good construct validity is necessary (6).

It follows that there is very little point in carrying out validation studies unless the non-test indicators are superior, both qualitatively and quantitatively, to the kinds of judgment, rating, or classification which are routinely available. If we want the Rorschach or the Bender or the MMPI to play a role analogous to what the EKG or gold-colloid tests play in organic medicine, we may have to adopt a causal and statistical model more like that of organic medicine. We have nothing strictly analogous to the pathologist's report (a face-valid "criterion"); therefore validation studies must employ multiple assessments of the same construct, numerous internal checks (sufficiently patterned but preserved from contamination), and some procedure for further checks on whether an apparent test miss is actually a miss or only seems to be so. For example: We study the *subset* of cases in which the Rorschach strongly indicated a schizophrenic structure but which were, by the usual concurrent validity criterion, not so diagnosed; then we might determine whether Q-sorts by the residents on each case tended to show a higher Q-correlation with an idealized Q-sort description of "pseudoneurotic schizophrenia" than is observed in randomly chosen non-schizophrenic cases.

Another approach with which we are currently working in our Multiphasic studies utilizes "temporal convergence" to the psychometrics. That is, recognizing that neither the test nor the non-test indicators (I prefer the term *indicator* to the term "criterion" in such contexts) is infallible, one can at least study the extent to which the non-test indicators and judgments tend to converge to the characterization yielded by the test as more non-test information is accumulated. Remembering the attenuation formula, the demonstration that a set of relatively unreliable clinical indicators converge over time (as a function of repeated and qualitatively diverse exposure to the patient) toward the perception of the patient provided by the test is encouraging, even when the absolute magnitude of the asymptote of this convergence function is mediocre.

A perennial problem in the validation of projective devices (which they share with structured devices when the latter are multi-variate) is the exact role that should be given in validation studies to the so-called "global" approach. While the method of correct matchings has been urged as the solution of this problem, and while I would readily agree that it has a definite place (especially in the early stages), I do not believe it can be defended as the method of choice. It does not present a very true-to-life validation context, since we are practically never concerned clinically to identify "who somebody is." The method does not reveal which variables are doing the work; a device which purports to tell us several different kinds of things may appear better or worse than it actually is on the basis of a small number of crude and clinically uninteresting dimensions to which matchers have learned to attend selectively. Our global thinking must not mislead us into forgetting that in the training of students we *do* teach them to pay attention to certain scores to which the test gives rise and to attach differential interpretive significance to each. That this is done contextually i.e. with reference to the pattern of the remaining scores, does not suffice to justify the matching method, although it does demonstrate the inappropriateness of confining a statistical analysis to the calculation of Pearson correlations between single-test dimensions and single-criterion variables. My own opinion is that Q-sort provides both quantifiability and globality, and is therefore preferable both to the traditional single-variable correlation on the one hand and the method of correct matchings on the other. There are unsolved problems with Q-technique, but our MMPI research has pretty well convinced us that for many clinical validation purposes it is the best method available. I think it unfortunate that the method detailed by Cronbach in 1948 has not been more widely used, although the number of judges required has no doubt militated against its application (1).

It would be nice to have some statistical gimmick for measuring the similarity of two complex characterizations of one person's dynamics and structure. This is not achieved by the method of matching, by single-trait correlations, by Q-correlations, nor, so far as I'm aware, by any method yet proposed. If I describe a person by the usual mixture of genotypic and phenotypic statements, the dynamic point of view sees each facet of the phenotype as an indicator of the genotype; and it is in some sense a more serious mistake to utter the single proposition, "This patient has rigid reaction formations against his unusually strong unconscious hostile impulses" (if that statement is in fact false), than it is to include erroneously a frequently present indicator, e.g., "The patient will be docile in accepting interpretations [because he will perceive disagreement as an aggressive act]" If the characterization were presented in numerical form as estimates of the patient's coordinates in the variables of the indicator or surface trait space, and similar estimates in the underlying causal or factor space, one of the available distance measures might be appropriate (2). Short of that idealized situation, however, one has the feeling that any numerical measure of the "closeness of fit" between two structural-dynamic characterizations would be excessively arbitrary.

I cannot refrain from a critical comment here with regard to the globality problem. Some clinicians are still confused between the complex psychological processes of the test-interpreter in arriving at his final integrated characterization of the patient, and the statistical problem of validating that interpretation. *After* he has weighed the various possibilities and taken account of the higher order interactions as best he can, the clinician *does* produce a set of utterances which are, taken singly, accurate in varying degrees. It is quite appropriate to determine the number or average amount of errors in the final description by considering the statements individually. Such a procedure, which studies the final result of the clinician's cerebrations, seems to me to be an unavoidable part of validation. This methodological point was made crystal clear by Kelly and Fiske (4) in their exposition of the Michigan assessment program's design, but in spite of the lack of any rational reply to their arguments the principle has even yet not completely sunk in.

A tough practical problem in the validation of multivariate instruments is that of utilizing higher order interaction effects among the test variables. The qualitative merits of the independent construct variable estimates should be excellent, as I've pointed out above, otherwise we are wasting our time. This usually means that the patients have been subjected to intense scrutiny by judges of a high level of clinical competence. On the other hand, the capitalization of random sampling errors increases horrendously as patterning effects are taken into consideration, so that the determination of a function and the assignment of optimal weights requires a large sample. In other branches of applied psychology or even in clinical psychology where predictive validity is really the problem, it often suffices to know a very little bit about a large number of persons; for other purposes, as in carrying out individual psycho-therapy, it suffices to know a very great deal at a deep level about a single person. In validating the configural indicators of a multivariate test, we find ourselves in the unhappy position of requiring to know a *great* deal about a *large* number of persons.

I come now to some considerations relating validation studies to clinical practice. Since the interpretation of multivariate devices involves the test-clinician combination (i.e., mechanical or cookbook procedures do not exist), at what level of clinical skill should the clinicians in validation studies be chosen? One can put several questions, each of which makes theoretical and practical sense. We cannot dismiss negative validation studies on the grounds that the Rorschachs used were not being read by Klopfer but by "ordinary" clinicians of only moderate skill. One empirical property of a clinical device is how much valid information is extracted from it by persons who have achieved that degree of proficiency typical of the population of users. Suppose that only 5% of people who are ABEPP diplomates, who have attended Rorschach workshops and have administered 300 or more Rorschachs under supervision, can arrive at clinically useful conclusions with the instrument; the taxpayer is being somewhat defrauded if the other 95% draw part of their salary on this basis. A second question is, "How much valid and clinically useful information can be extracted by the *most* skillful interpreters of an instrument?" Finally, one may ask, "*How much information is intrinsically contained in the test behavior?*" We are beginning to collect some evidence with regard to the MMPI that *nobody* gets all of the information out (3, 7, 8) and I would assume that to be equally true of less structured devices.

"Clinically useful information" is actually a rather complicated notion.

The *weakest* claim that can be made for a test is that it tells us things about the patient which are true. It is a remarkable social phenomenon that, within an allegedly scientific profession, even this claim has not as yet been clearly supported with respect to the majority of the inferential uses to which our favorite devices are being put. Secondly, one may ask, "How much valid information does the instrument yield which is not readily available from other sources present in any clinical context and who will routinely be making these judgments regardless of whether we use the test?" A third question is, "How much sooner in the time sequence does such incremental information become available to us through the use of the test?" If my test tells me something about the patient which I do not get from the initial diagnostic interview but which I will be able to assess with a relatively high degree of probability by the end of the fifth therapeutic hour, the use of the test is hard to justify.

Finally—the really important question—"What is the incremental efficiency in clinical handling (that is, both in gross administrative decision-making and in the moment-to-moment decisions made in the course of psychotherapy) achieved through incremental information provided in advance by the test?" The difficulties of designing experiments to answer this fourth question are considerable, but it seems to me obvious that the ultimate justification for the clinical use of devices, projective or otherwise, must lie here. I am myself inclined to be somewhat skeptical in this regard, and it is a source of continual amazement to me the extent to which many clinicians take the answer for granted.

In concluding, I cannot miss the opportunity to attack an unfortunate tendency, springing no doubt from over-identification with our favorite devices (combined with a lurking fear that they may not be quite as valid as "everybody knows" they are), to reject any experimental or statistical design which is offered, on the ground that it is artificial or not in accord with actual clinical practice. True, some unimaginative designs have been employed to produce negative results when a more sophisticated approach would have elicited the validities actually present. But I think it is time for some blunt speaking within our profession about the disparity which exists between even the best available studies of validity and the amount of faith—and I use here a theological word deliberately—invested by a large number of practitioners in current methods. Studies such as that of Kostlan (5) in which the incremental information provided by each of several instruments is estimated by showing the effect of *subtracting* that source from the total pattern of data available, are sufficiently close to "real life" clinical practice that no one is ethically and scientifically entitled to ignore the findings. There is far too great a tendency to invoke "clinical experience" as though it were a satisfactory answer to the validation question. Such a mistake could only be made by someone ignorant of the history of science (particularly of the medical sciences) or remarkably naive about those errors in observation, memory, and interpretation to which the human intellect is subject.

REFERENCES

1. Cronbach, L. J. "A validation design for qualitative studies of personality." *J. consult. Psychol.*, 1948, *12*, 365-374.

2. Cronbach, L. J. and Gleser, Goldine C. "Assessing similarity between profiles." *Psychol. Bull.*, 1953, *50*, 456-473.

3. Halbower, C. C. "A comparison of actuarial versus clinical prediction to classes discriminated by MMPI." Unpublished Ph.D. Thesis, University of Minnesota, 1955.

4. Kelly, E. L. and Fiske, D. W. *The prediction of performance in clinical psychology*. Ann Arbor, Mich.: University of Michigan Press, 1951.

5. Kostlan, A. "A method for the empirical study of psychodiagnosis." *J. consult. Psychol.*, 1954, *18*, 83-88.

6. Loevinger, Jane. "Objective tests as instruments of psychological theory." *Psychol. Reports, Monogr. Supplement* 9, 1957, *3*, 635-694.

7. Meehl, P. E. "A comparison of clinicians with five statistical methods of identifying psychotic MMPI profiles." *J. counsel. Psychol.*, 1959, *6*, 102-109.

8. Sines, L. K. "An experimental investigation of the relative contribution to clinical diagnosis and personality description of various kinds of pertinent data." Unpublished Ph.D. Thesis, University of Minnesota, 1957.

Received December 8, 1958.

A Study in Validation of the Thematic Apperception Test[1]

WILLIAM E. HENRY
University of Chicago
JANE FARLEY
Parmly Foundation for Auditory Research, Illinois Institute of Technology

The study reported is based upon an analysis of variance design which evaluates the degree of correctness with which TAT interpretations can be identified with the correct TAT subjects, in randomized matching. "Blind" interpretations of TAT's administered to a group of 36 14-15 year old adolescents are systematically compared with similarly "blindly" derived summaries of selected criterion data (objective test scores, summaries of observations and interviews, and Rorschach interpretations). All instruments represented in the criterion data had been summarized independently, but each summary was patterned on the same conceptual framework, agreed upon in advance by each of the clinicians interpreting the various instruments.

The present study, using the data described, follows a model proposed by Cronbach (1). The 36 adolescent subjects were divided into 12 "triads." Criterion material for each triad was separated into statements, and grouped into four general concept areas (Peer Relations, Family, Mental Functioning, and Emotional Adjustment). Expert judges were then asked to match individual TAT interpretations against a series of statement sheets in which criterion statements from three subjects were randomly represented, giving a "t", a "0", or a "?" rating to each comparison. Modifications of the Cronbach design permit the derivation of statements assessing the influence of various effects of the judging procedure, to include the effect of the individual case being judged, the order of the presentation of cases, the effect of the particular criterion instrument being used, the sequence of cases judged, the behavior area being judged, and others.

Since the judging operation comprises two tasks — correct selection of matching items, and correct rejection of nonmatching items — the correctness "scores" of judges were similarly divided. Judges' scores were treated separately, as reflecting on the ability of the TAT to identify descriptions of a particular individual, or on the sensitivity of the TAT in discriminating between individuals. The analysis of variance was undertaken on both identification matchings (I-scores) and upon discrimination matchings (D-scores).

In all instances, hypotheses related to the validity of the original blind TAT interpretations are demonstrably true at a level of confidence very considerably beyond the .01 level. This level of confidence is based on the F-distribution, and makes use of a special index developed by Dr. David

---

[1] This study was made possible by a grant to William E. Henry from the National Institute of Mental Health, and by a second grant from the Social Science Research Committee of the University of Chicago. It is based upon a dissertation submitted by Jane Farley in partial fulfillment of the requirements for the doctorate at the University of Chicago. The authors wish to acknowledge their great indebtedness to the psychologists who undertook the arduous judging tasks, either in a pilot study or in the main study here reported: Dr. Mary Grier, Dr. Natalie Haimowitz, Dr. Rosalind Cartwright, Mrs. Gisele Mendell, Dr. Hedda Bolgar, Mrs. Harriet B. Moore, Dr. Johanna Tabin, Dr. Sidney J. Levy, Dr. Arthur Hartman, Dr. Robert McFarland, Dr. Irving Leiden; and to Mr. Eric Klinger and Mr. Robert Hendrickson, who assisted at various stages in the preparation of materials for judging and in the statistical analysis; to Mr. Melvin R. Novick, Association of American Medical Colleges, for his statistical advice; and to Dr. David Wallace of the Department of Statistics of the University of Chicago, who served as statistical advisor throughout the project.

Wallace of the Department of Statistics, University of Chicago. The Wallace Index is used in computing each correctness score which is entered in the F-equation, in such a way that the resulting F-value is the percentage by which the correctness of that score exceeds chance. The high level of success thus obtained holds for both the I-scores and the D-scores. Certain differentiations between these scores will be discussed below.

POPULATION

The 36 cases involved were adolescents of approximately 14 years of age, all from the same school in a midwestern community of under 10,000 population. All were "normal," in that they were going to school, living in their own homes. Half of the subjects were girls, half boys.

TAT INTERPRETATIONS

The basic material to be judged consisted of individual TAT interpretations made by one person upon the records of these 36 adolescents. Interpretations were made blind for each subject, with the exception of knowledge of sex and age.

CRITERION SUMMARIES

The basic data against which the TAT interpretations were judged for fit were derived from instruments representing three general types, or levels, of material:

1. Objective Behavior—Sociometric and Guess-Who Tests, Family Relations Questionnaire, Stanford-Binet, academic achievement tests, school grades, and the Emotional Response Test of Bavelas.

2. Subjective Behavior — derived from observations and interviews with teachers, parents, peers in home and in school.

3. Projective Behavior — the Rorschach.

CONCEPTUAL FRAMEWORK

The framework of concepts used was identical for each criterion instrument, and for the TAT (2). It included two gross areas of personality, *Social Interaction*, and *Characteristics of Self*. The Social Interaction elements include peer relations and family relations. The Characteristics of Self elements include mental functioning, emotional reactivity, inner adjustment, the defense mechanisms, and so on. In all major areas, with their various subdivisions, the personality analysis of each instrument was divided still further into 27 statement areas. In the final materials for judging, each statement area was directly comparable. Thus statement No. 1 from any one of the criterion instruments always deals with the "Degree of participation in Peer Groups" (in the Social Interaction area), statement No. 16 was always material related to "Basic Emotional Attitude," (from the Self area), etc.

The 27 statement areas were grouped on the statement sheets according to four larger categories—I. Peer Relations, II. Family Dynamics, III. Mental Functioning, IV. Emotional Adjustment.

ASSIGNMENT OF CASES TO TRIADS

The 18 male and 18 female cases were then randomly assigned to triads, and the position of each subject within the triads similarly randomly assigned.

THE JUDGES AND THE JUDGING PROCEDURE

Nine psychologists, all experienced clinicians and projective-analysts, were chosen as judges. For these nine judges, three different presentation patterns were designed, with three judges (a judge "trio") receiving each of the patterns. In this way, replication within trios makes possible a check on the reliability of judging, and each TAT summary is matched with each criterion equally often. The presentation orders were balanced, to avoid or to detect practice effects, or any interactional effects from the sequence of criterion type, sequence of individual subjects in a given triad, and so on. Scoring instructions for the judges were standardized, and each judge's ratings were made on separate scoring forms.

ANALYSIS OF DATA

We have undertaken two largely independent analyses of variance aimed at the analysis of the judgments of Errors of Identification (I-scores) and at the Errors of Discrimination (D-scores). Within each, we have analyzed the contribution made by some of the various effects of the judging process.

RESULTS

Since the details of the statistical analysis will be reported in a subsequent monograph, we will limit ourselves to a mere statement of our conclusions.

1. *The Validity of the TAT.* We selected, as the evidence for a general validity hypothesis, I-scores which showed a greater than chance relationship between TAT statements and criteria, at a .01 level of confidence. All of the I-score blocks show significant agreement considerably beyond this .01 level. There was no significant variation between the types of criterion instrument (objective tests, interviews, Rorschach) in the agreement of each with the TAT predictions. Although various effects of behavior area, presentation order and sequence, individual subjects, and their various interactions, were for the most part highly significant in their influence upon the scores, even the lowest agreement scores were far above chance in every case. None of the effects or interactions tested depressed the scores of any block below the .01 significance level. Similarly, despite a rather surprising lack of conformity among the judgements of these expert judges, all judges' scores matched the correct "I" ratings at or above the .01 level.

2. *The Discrimination Power of the TAT.* We find an hypothesis about the usefulness of the TAT in expressing the uniqueness of individual personality unequivocally supported by the high Discrimination ("D") scores obtained. These scores, like the Identification scores, are significant considerably beyond the .01 level.

3. *The Scope of the Concepts Relevant for the TAT.* There is no area of concepts, no criterion instrument, no presentation effect which reduces the significance level of the correctness of TAT-criterion matchings. Thus we can claim for the TAT, within the limits of the four broad and 27 detailed concept areas, and within the population dealt with, the wide scope implied by the generality of our hypotheses. However, some differentiations within the various effects of judging were found. By far the greatest single effect on the judging process relates to differences in the behavior area in which the prediction was made (Peer Group, Family Dynamics, Mental Functioning, Emotional Adjustment). This effect is entirely in keeping with expectation. The reason commonly given for assessing personality by a battery of tests, rather than by a single instrument, is that the tests will be focussed upon different areas of personality function. Scores in the four areas mentioned divide themselves neatly into two groups—a Peer Group-Emotional Adjustment category, and a Family Dynamics-Mental Functioning category — with the two sections in each group showing virtually the same percentage of agreement above chance, and the former group noticeably more accurately judged than the latter. It should be noted that the lower efficiency of judgment in these latter areas is only a relative matter, since agreement was significantly beyond chance for all areas. There are several possible explanations of this differential agreement. It may reflect a true differential ability of the TAT. It may reflect the particular preoccupations of the life stage of our population. It may reflect the particular foci of interest of the TAT interpreter.

4. *The "Fatigue" Effect.* Between the first, second, and third sections of the total matchings undertaken by

each judge, there is a consistent, though not extraordinarily large, decline in performance. This applies to both I and D scores, and to all presentation orders, and seems to represent a simple function of fatigue.

5. *Conclusions about the Clinical Use of the TAT.*

a. *There is no single correct way of employing the TAT interpretations.* There was little individual-item-agreement between judges, but each judge made enough "correct" judgments to yield the highly significant agreement figures reported. Judges may arrive at essentially the same interpretive implications by quite different routes; or judges may differ individually in their ability to utilize TAT predictions in different concept areas, or for different subjects. But whatever the route used, all judges arrived at a substantially accurate understanding of each subject, despite great inter-judge variability.

b. *Judges appear to make more efficient use of the projective (TAT) report when the decisions they must make are definitive and detailed,* than when they are relatively simple; i.e., because there is overlap in the behavioral repertoires of individuals, it is easy to make the mistake of including in a subject's potential responses those which are more characteristic of someone else. It is more difficult (and more inaccurate) to exclude from a subject's potential responses those he in fact displays. Conversely, it is less difficult to make the second type of judgment correctly than the first. Although there were more mistakes of the "D" type, as expected, the judges also varied much more widely in their ability to make the "I" type of judgment accurately. We have concluded that the "set" necessary for making fine distinctions (concentration, deliberation, and impersonal detached judgment) are more conducive to evenly accurate diagnosis than the more spontaneous, personally colored approach used in making the less tedious comparisons.

c. *The judges' perceptions were sharpened by consideration of a variety of personality data, but there is a point of diminishing returns.* Although a certain amount of facilitation in judgment is produced by examining the subject from several angles, there is also a "fatigue" effect produced by a superfluity of information, and this effect becomes dominant when the clinician considers many subjects.

d. *Clinicians have their particular 'specialties.'* The accuracy of matching differed with each judge, from individual to individual. There was, at the same time, no clear agreement between judges as to which individuals were judged more accurately. The exact cause of the divergence is not clear, but the crucial variable is apparently strictly personal. That is, it is explained by a difference in the way a judge perceives certain subjects or groups of subjects. It may be that the judge is especially expert at recognizing all hysterics; another judge matches boys better than girls; a third simply finds certain individuals more interesting than others, and is thus more involved with those individuals. In any case, each judge fluctuated in his ability to judge different individuals, and no two judges fluctuated in exactly the same direction.

e. *Instrument.* One negative finding is fully as important as the positive results of any other of the tested variables; this is the nonsignificance of the differences between criterion instruments, and of the instrument-area interaction. It was confidently hoped that the results of this validation study would provide some clue to the place of the TAT in a clinical test battery for personality assessment. Since three different types of instrument were included among the criteria against which the TAT was matched, there was reason to believe that the TAT would show itself to be closer to one than another of these techniques. In stating the evidence acceptable for confirmation of the validity hypothesis, a "standard" was selected from the three criteria for each area of prediction. This selection was made in the express anticipation of notable area-instrument interaction. The nonsignificance of these effects presents three possible interpretations:

(1) There is actually no difference in level or in accuracy between the reports made from the objective, subjective, and projective tests, as applied to the four behavioral areas.

(2) The TAT is so flexible, and so comprehensive that it taps all levels of all areas equally well.

(3) The interpreters of each of the criterion instruments knew their tests so well that none of them ventured beyond the information legitimately provided by those instruments; consequently, the criterion information should vary in richness and clarity as the information sought was nearer or further from the focus of the instrument; but the statements would not be based on an overextension of the instrument, and would be less likely to be false than a forced statement might be. In this way, judges comparing these statements with the TAT might be required to make decisions on the basis of superficial or meager information, or might be faced with a "no information" item, but would probably not be asked to match the TAT with an incorrect statement. Consequently — assuming a consistent level of validity for TAT interpretation — there might be no significant change in error score (false plus or false zero), but a great deal more uncertainty (question mark).

The first alternative (equivalence of tests) we can discard, since it is contradicted by all of clinical tradition and experience. The second alternative (flexibility and comprehensiveness of the TAT) is very tempting and may well be partially true. However, the "one perfect" clinical test idea does not agree with personality theory, with test theory, or with the experience-based opinions of testers.

The third alternative (limitation of the scope of interpretation in criterion data) —or at best a combination of the second and third — is probably the truest explanation of the unexpected negative finding. We have one ready-made index to the plausibility of this explanation: the hypothesized "meagerness" or "superficiality" of data are matters of opinion, which it would be difficult to verify; but the "no information" items are perfectly definite and verifiable. The distribution of no-information items lends credence to our answer. Using the same criterion for each area, we find the "no information" items distributed according to this pattern. The instrument-area combinations chosen as ideal have the smallest number of N.I. entries. The smallest proportion of N.I.'s given for the observation and interview criterion was in the Family Relations area; the smallest proportion of N.I. items in the Emotional Adjustment areas is from the projective (Rorschach) criterion; the smallest proportion of objective "no information" items is found in the Peer Area. The single contradictory entry in the table is the large number of N.I. items found for the objective criterion in the Mental Functioning area. However, 70 per cent of these data failures occurred on items 14 and 15, which concern creativity and fantasy, and about which the objective data might be expected to have less to say.

REFERENCES

1. Cronbach, Lee J. A validation design for qualitative studies of personality. *J. Consult. Psychol.*, 1948, *12*, 365-374.

2. Henry, W. E. *The analysis of fantasy*. New York: Wiley, 1956.

Received December 8, 1958

What is a Criterion?[1]

EVELYN HOOKER
University of California at Los Angeles

I take the liberty of departing from the general pattern followed by most of my colleagues in this symposium, that is, concern about aspects of the validation process in general as applied to projective techniques. Instead, I shall try to raise some issues about validation within the context of a specific clinical area, namely, homosexuality. This is done with the hope that the issues may be clearer if seen with concrete application; moreover, the theoretical and practical importance of validating projective test instruments for the diagnosis of homosexuality needs no special documentation.

I agree with Professor Meehl that the majority of validation problems are those of construct validity and that careful scrutiny of apparent cases of concurrent validity will reveal that these rubrics are only superficially appropriate. I would extend the case still further, to postulate that studies which restrict themselves to concurrent validity are relatively sterile. Unless our validity studies make clear the nature of the psychological phenomenon being investigated, without depending solely on a diagnostic label of the behavior which constitutes the criterion, we are simply technicians — and not very good ones, at that.

Let me try to make this clear by turning to validation studies of overt homosexuality. The tests which have been most frequently used for the diagnosis of homosexuality are the Rorschach and the TAT. The current validity status of the two instruments can be fairly quickly summarized. In only a bare handful of studies has an attempt been made to validate both of these instruments by comparing overt homosexuals with non-homosexuals, using test indicators called "homosexual indices." Davids, Joelson, and McArthur (1), using the Wheeler (9) homosexual-content indices in the Rorschach, found that these would differentiate a group of overt homosexuals who were college students from a group of non-homosexual "normal" students and also from a non-homosexual neurotic group of students but that they would not reliably distinguish individuals within these groups. Ferracuti and Rizzo (2), in a study conducted in Italy, found that the Wheeler indices, taken as a whole, would not differentiate a group of homosexual prisoners from non-homosexual prisoners but that the presence of any one sign or any two signs would distinguish the two groups. Nitsche, Robinson, and Parsons (7), using a list of content categories similar to Wheeler's, found that the homosexual signs did not differentiate a group of "recently convicted" homosexuals from patients with no known homosexual activity. In my own work (4), the total Wheeler content-indices discriminated between a group of overt homosexuals and a group of non-homosexuals only when the differences in matched pairs were taken into account. Thus, the differences are so small that for clinical purposes they are unimportant. Add to the discrepancies in the findings just cited the fact that, in the groups of records with which I worked, expert Rorschach workers were unable to distinguish homosexual from heterosexual records, even when presented with matched protocols. In none of these studies has it been found that individual records could be validly diagnosed: the criterion "overt homosexuality" obviously covered a "multitude of sins." Kinsey and his associates (5) have demonstrated the fallacy of assuming that a homosexual is an individual who has engaged in a homosexual act. Unless the extent of heterosexual activity and/or homosexual activity, together with the pattern of desires, is made clear, the criterion becomes ambiguous.

---

[1] This investigation was supported by Research Grant M-839, from The National Institute of Mental Health of the National Institutes of Health, Public Health Service.

Let us take a look at the results with the TAT. As far as I know, only three studies have been reported in the literature. Davids, Joelson, and McArthur (1), in the study previously reported, used the TAT in addition to the Rorschach. Using TAT homosexual indices gathered from the literature, they found that these, taken as a group, would differentiate the homosexual from the non-homosexual group and that the Rorschach and TAT signs were significantly correlated. Ferracuti and Rizzo (2), using a somewhat similar set of TAT signs, found that they did not distinguish the two groups. Lindzey, Tejessy, and Zamansky (6), also using college students, have found that the TAT indices will differentiate a homosexual from a non-homosexual group but that an uninstructed and unhampered clinician could do a much better job of differentiating than would the objective rater. I found that the TAT and MAPS protocols of the homosexuals previously described in connection with the Rorschach study (4) were so full of manifest homosexual content that neither the judgment of a clinician nor an objective rating of indices was necessary in order to distinguish the homosexual from the heterosexual records. The TAT and MAPS thus would appear to be more valid instruments for detecting homosexuality than is the Rorschach. But let us not be hasty! Lindzey, Tejessy, and Zamansky state (6, p. 73), "It is evident that the variables that function best are precisely those which one would not expect to encounter when dealing with strongly repressed homosexuality or with an overt homosexual who was attempting to conceal this aspect of his behavior." I would like to underscore that remark heavily, not only for the TAT and MAPS but, also, with somewhat less confidence, for the Rorschach. A subject who had given a Rorschach record which, up to this point, gave no indication of homosexuality, produced an oral-genital response which he prefaced with, "I hate to say this, because it will give me away." He had already "given himself away," since he had told me he was homosexual although he was married. He also had told me that he would not have come to me were I living in his home town. He successfully conceals his homosexuality, and is a highly respected professional man in his community. Another said, "I have heard that homosexuals are supposed to see sex in this, but I honestly can't." Test subjects these days are obviously no longer as naive as we like to believe.

The situation is not very encouraging for the clinician who wishes to use any of these three projective instruments for the diagnosis of homosexuality. All of the investigators point out that the use of the signs for individual diagnosis is unwarranted — unless, in the TAT, the subject virtually tells us that he is a homosexual. Why not let him tell us directly? If all one is looking for in the projective protocol is the answer to the question, "Is he homosexual," one may be using an inefficient means of obtaining the answer. If the subject is set not to give the show away, a projective test may not help us much.

Can the situation be improved? Yes, I think it can be, provided we begin to think seriously about the fact that studies of concurrent validity are, in reality, either good or poor studies of construct validity. Or, to put it in a slightly different way, we cannot hope to use projective techniques to answer the question accurately, "*Who* is a homosexual," until we know much more about who or what a homosexual *is*.

In the studies cited, two personality pictures of "the" homosexual have been used. To quote Wheeler (9, p. 123), "If it is possible to accept the rationale for each item in terms of the aforementioned results, a combined picture of the male 'homosexual' would be: A somewhat paranoid individual with derogatory attitudes toward people, especially women, which is accompanied by a feminine identification. There are indications of anal interests and interest in physical relationships between like beings. There is apparently some preoccupation with sex in general and some autoerotic concern." To quote Lindzey (6, p. 74), "Our tentative findings suggest that the TAT protocols of the individual characterized by strong homosexual tendencies display consistently negative attitudes toward women, a lack of full, rich, and satisfying relations with members of the opposite sex, and occasional reference to manifest homosexuality." A basic assumption which they have in common is that "the" homosexual exists and that he is characterized by attitudes consistent with hatred of, or at least negative attitudes toward, women—a relatively simple construct. I venture to suggest that not only is it too simple but it is not altogether true. Let me hasten to add that many homosexuals can be characterized in this way; but even for them it is a caricature of the complexity of the individuals involved. At the risk of stating a self-evident fact, it is apparent to anyone with knowledge of the wide individual variations in homosexual patterns and life styles, as well as to anyone who has looked at projective test protocols or life histories, that homosexuality is not an entity but is, rather, a multi-manifested phenomenon.

It is precisely here that projective techniques can help us. We need to get beyond the fact that the individual is homosexual, to the kind of homosexual that he is. We are badly in need of fruitful theory which will take into account the multiplicity of variables which appear to be operating. Projective techniques can be valuable sources of constructs for such theory-building. It is not an easy task; and it is one which, I think, will not be accomplished by the development of "homosexual signs." It seems unlikely that signs will help us to diagnose or understand individuals who are as varied as—to quote judges who have interpreted the projective protocols—"an impoverished, restricted, promiscuous, compulsive homosexual, devoid of the capacity for deep feeling"; "a straight heterosexual—except in the bedroom"; "sensitive, independent, autonomous, with strong control of impulses and with a moral attitude toward sex"; "a positive homosexual who goes through life gently, with lots of strength and no hostility, makes strong relationships, and for whom homosexuality is a way of self-actualization"; "a passive-aggressive iconoclast who has libidinized all of his psychological needs in fellatio"; "a paranoid character who has never made up his mind whether he is a boy or a girl, a tormented, sad homosexual who flees from close relations and is at the mercy of his own intense emotions"; "an individual with lots of strength as a man, who plays the assertive role with men, and with tremendous hostility to women"; and, finally, just to bring this arbitrarily to a close, "a homosexual with pervasive feminine orientation, a very passionate person, an aggressive personality with a paranoid base." The most striking finding of the three judges (3) who examined the projective materials was that many of the homosexuals were very well adjusted. In fact the three judges agreed on two-thirds of the group as being average to superior in adjustment. Not only do all homosexuals not have strong feminine identification, nor are they all "somewhat paranoid," but, according to the judges, some may not be characterized by any demonstrable pathology!

It will have become evident by this time that I am not greatly disturbed by the fact that projective techniques are not demonstrably valid means for diagnosing homosexuality. In fact I am rather encouraged by this, because I hope it will force us to re-examine the much over-simplified picture we have had and encourage us to remind ourselves that the first goal of science is understanding, with prediction and control as secondary to it. It may not be inappropriate to quote here the opening sentence of the APA recommendations for psychological tests and diagnostic techniques (8, p. 1): "Psychological and educational tests are used in arriving at decisions which may have great influence on the ultimate welfare of the persons tested, and of the community." There is probably no clinical area in which psychological tests are used for which that statement has greater import than that of homosexuality.

REFERENCES

1. Davids, A., Joelson, M., and McArthur, C. Rorschach and TAT indices of homosexuality in overt homosexuals, neurotics, and normal males. *J. abnorm. soc. Psychol.*, 1956, *53*, 161-172.

2. Ferracuti, F. and Rizzo, G. B. Analisi del valore discriminativo di alcuni segni di omosessualita rilevabili attraverso tecniche proiettive. *Bolletino di Psicologia e Sociologia applicate*, 1956, *13-16*, 128-134.

3. Hooker, E. The adjustment of the male overt homosexual. *J. proj. Tech.*, 1957, *21*, 18-31.

4. Hooker, E. Male homosexuality in the Rorschach. *J. proj. Tech.*, 1958, *22*, 33-54.

5. Kinsey, A. C., Pomeroy, W. B., and Martin, C. E. *Sexual behavior in the human male.* Philadelphia: Saunders, 1948.

6. Lindzey, G., Tejessy, C., and Zamansky, H. S. Thematic Apperception Test: An empirical examination of some indices of homosexuality. *J. abnorm. soc. Psychol.*, 1958, *57*, 67-75.

7. Nitsche, C., Robinson, J., and Parsons, E. Homosexuality and the Rorschach. *J. consult. Psychol.*, 1956, *20*, 196.

8. Technical recommendations for psychological tests and diagnostic techniques. *Psychol. Bull. Suppl.*, 1954, *51*, Part 2, 1-38.

9. Wheeler, W. M. An analysis of Rorschach indices of male homosexuality. *J. proj. Tech.*, 1949, *13*, 97-126.

Received December 8, 1958

Validity and Methodology in Projective Tests

NORMAN L. FARBEROW
V.A. Center, Los Angeles

The reflections in this paper stem from a study by Dr. Shneidman and me on "TAT Heroes of Suicidal and Non-Suicidal Subjects," a report of which appeared in the June 1958 issue of the *Journal of Projective Techniques* (10). This was a study which started out as a clinical investigation of suicidal individuals as inferred from their reactions to the TAT, but which ended up as an examination of the validity and methodology of the techniques used. This is not the occasion to go into details about that experiment, but in order to report these reflections, let me briefly review some aspects of the study.

In essence, ninety-three TATs were gathered into seven groups which were then compared with each other. The categories consisted of three groups of males, normal, neurotic, and psychotic, who were *non*-suicidal; two groups of males, neurotic and psychotic, who had *attempted* suicide; one group of neurotic females who had *attempted* suicide; and one group of neurotic males who had completed suicide. The technique used was one devised by Ira Friedman in which, instead of the usual procedure of rating for the attributes of the story-teller, the attributes of the TAT *heroes* of the TAT protocols were sorted (3, 4). These were rated—completely blind—by means of an 80-item, nine-step, Q-sort procedure by one judge, in this case, Dr. Friedman himself.

It was our hope that the sorting for the attributes of the story-hero rather than for the characteristics of the story-teller would permit us to eliminate some of the harrassing problems of unreliability and to come closer to grasping some of the essential differences in the thematic productions of suicidal and non-suicidal subjects. We do not wish to say that our analysis of the statistical results were completely disappointing, but suffice it to say that on viewing the results one of us went into a sharp reactive depression. In reflecting back to our feelings at the beginning of the study, it seems that we covertly had the naive hope that the results would be something as follows: that our reliabilities would be perfect; that the within-group correlations would be plus one, indicating complete homogeneity within each group; and that the between-groups correlations would be around zero, indicating that these homogeneous groups were, indeed, different from one another. We could then describe in some detail those clinically significant attributes which nature, the TAT, and statistics had shown to characterize each of the seven groups. Clinicians would then have new and practical clues to sharpen our diagnostic acumen and to enable them to distinguish among individuals who have attempted suicide or who will commit suicide. Our IBM equipment, alas, betrayed us. It appeared that none of the seven groups was essentially homogenous and that while our judge was able to make essentially correct over-all judgments better than chance as to the sex of the subjects, and as to normal versus disturbed (but not suicidal) subjects, the differentiation between suicidal and non-suicidal status yielded no better than chance expectation. In thinking through the results we came to the conclusion that the study had some interesting implications for the validity and methodology of picture thematic tests.

We were faced with the inescapable results that the TAT, as it had been employed in our study, could not differentiate between groups of suicidal and non-suicidal subjects. The possibility that there were no essential differences was a conclusion we could not comfortably accept, having had the benefit of a great deal of clinical and empirical observation behind us from over a decade of intensive research pre-occupation with the subject. Our conclusion was that not only was the nature of the phenomenon we were attempting to measure so complex, but that the nature of the stimuli used to evoke such differences were either so varied, or even inappropriate, that the differences must, indeed, have been masked.

In terms of the phenomenon, or better, the phenomena, of suicide, we felt we were under no misconceptions as to the complexity of the subject we were studying. To paraphrase Dr. Hooker, it is extremely difficult to know who *is* suicidal until we know who the suicidal person *is*. As an example of the complexity, we need only point to such varied and desperate individuals as the young teen-ager who blows off his head on his jilting girlfriend's porch; the older man, widowed and with a terminal disease, who gently slashes his wrists and lied down in bed slowly to bleed to death; or the schizophrenic girl who attends to an hallucinatory voice that the first step down from the sixth story window of the hospital is not so high after all. For still more examples, we may look among the attempted suicides, where we may have the aborted successful attempt in which the individual is saved only by a freakish accident, or the genuine attempts with various degrees of a "gamble with death" (11), or the gestural attempt, where the intent to die is completely absent. It becomes obvious that the motives or the patterns of motives may run the gamut of those previously conceptualized, such as those offered by Durkheim, Freud, Jung, Menninger, Kelly, and others, and includes many, we are sure, yet to be conceptualized, we hope, by us and by others working with this problem. In our search for further constructs in the understanding of suicide, our disappointment served to remind us again that neither we nor our tests are omnipotent, and that we cannot reasonably expect universal and eternally perfect correlations with aspects of nature we have only incompletely conceptualized.

Our questions at this point were old familiar ones. For example, we even debated the basic question of whether it was possible to identify or to predict an overt act or the state of mind which produces such behavior, from fantasy productions aroused in a special set of conditions, conditions which were usually very carefully arranged beforehand to eliminate any behavior other than the production of fantasy. I will not burden us with reports of the experiments on the relationships between test performance and behavior other than to remind us that they have been both confusing and frustrating. Dr. Bert Forer, Editor of the *Journal of Projective Techniques,* expressed essentially our feeling when, in commenting on the papers in last year's Symposium on Research in Projective Techniques, he said, "There is a good deal of psychological substance between drives and behavior." Nevertheless, while we are aware that the expression of a motive in one context or at one level of psychological organization has not been too highly correlated with its manifestations at another psychological level, this basic assumption must be made or indeed there can be no justification for projective tests. In other words, there must be an essential relatedness or equivalence of behaviors; the task then becomes one of finding behaviors with the highest equivalence. This becomes simply another way of stating the basic problem of validity: will the test data yield meaningful information about the behavior being examined.

It becomes apparent from the above that in the use of projective tests the nature of the stimuli employed in the investigation of any set of phenomena assumes proportions of major importance. This attention to the nature of the stimuli would fall within that special aspect of validity suggested by Dr.

Shneidman in his five-part delineation of the problem of validity, specifically, Validity For What.

In reflecting on the nature of the stimuli we had employed in our study, the closely related questions of globality and of relevance seemed important. The evaluations of an entire TAT protocol in terms of composite judgments for the identification or prediction of particular kinds of behavior have generally led to poor results. The TAT, like most projective tests, was conceived of as a global test, yielding many data about many facets of personality, with, as we have painfully learned, much depending upon the skill of the clinician-interpreter. Today, much of the trend seems to be toward devising instruments for measuring the individual constructs which go toward making up the global personality, a trend to which we wish to add our voice. Cronbach and Meehl in their article on Construct Validity in the *Psychological Bulletin* in 1955 (2) stated that global interpretations require validation of the separate constructs implied or inferred in each separate statement about an individual. Bindra in his article entitled "Psychotherapy and Recovery from Neuroses" (1) suggested that globality may be all right for the clinician, but that the researcher must concentrate on "Truth" in small portions, chewable bites, and digestible bits. Kelly, in his review chapter on assessment in the 1955 *Annual Review of Psychology* (6), lists tests for individual constructs, such as anxiety, dependency, and other familiar terms. In addition, the relevance of a test, such as the TAT, or Rorschach, for measuring a phenomenon also rests squarely in the middle of validity, the Validity of What question. The TAT, by the very nature of its construction, taps a wide range of many facets of personality and could not hope to encompass an adequate appraisal of the polarities of each of the psychological constructs invoked. Other tests measuring such polarities within the individual constructs are needed, not to supplant the TAT, but rather to supplement it.

At the beginning of the present study it seemed to us that the technique of evaluating the attributes of the hero offered an unusual opportunity to stick close to the given data and thus to obtain interjudge reliabilities based on phenotypes. What we had not anticipated was that one cannot collate or average or add heroes. Consider: the clinician's usual diagnostic task is comparable to seeing a play, for example *Hamlet,* and then divining Shakespeare's personality attributes. In the hero-oriented approach, the task is to see *Hamlet* and then describe, in some systematic way, Hamlet's personality characteristics. But, if on a single day the clinician were to see *Hamlet, Love's Labor Lost, Othello, Measure for Measure, King Lear,* and *All's Well That Ends Well*—how could he then give a *single* description of the chief protagonist of *all* these plays? Unfortunately, this was the judge's task in the present study.

The recommendation at this point is an obvious one (and one which we intend to pursue); namely that the protocols be separated into their respective stories and judgments be made across the protocols in terms of single stories, that is, all the heroes described in the stories given to Card 6BM would be judged, the heroes of 7BM, 13MF, etc., and then the correlations could be made. Further, we would intend to design specific sets of picture thematic stimulus materials, to investigate hostility feelings, suicidal feelings, etc.

Our suggestion, then, is for a modification of the stimulus data, using the TAT principle. We all know that the TAT has been manipulated in several ways. The first way that occurs to one is that Murray himself devised the TAT materials so that there was contained within them a continuum between highly structured and highly ambiguous stimuli. The second way in which the TAT principle has been manipulated is by variation of the content of the test materials for particular purposes, i.e. the creation of special sets of TAT like cards for specific kinds of subjects. There are, for example, TAT modifications for Negroes, for Navajoes, for Utes, for paraplegics, for Michigan adolescents, Korean prisoners-of-war, and even for some animals like the CAT. What we want to suggest is a third dimension along which the TAT principle can be varied; that is, for the measurement of specific behavioral and emotional constructs. We believe that what seems to be called for are *specific sets* of projective materials which are devised especially and used experimentally to explore the *particular* continua of personality functions. Specifically, we suggest, that special sets of picture thematic materials be constructed along such continua as hostility, homosexuality, passivity, suicidal potential, etc. This suggestion is in line with previous work by Little and Winder (8), and by Lesser (7). In concentrating on the area of interest to us, we envisage the construction of a set of cards which would fall along the continuum of suicidal-fantasy evoking stimuli, in which is contained one card (among several) that has for practically all subjects no suicidal card-pull, and at the other end another card that has for practically all subjects a prepotent suicidal card-pull. As Murstein has similarly stated in his article "Non-projective Determinants of Perception on the TAT" (9), it is important to know the non-projective determinants of perception on any stimulus so that the amount of projection may be evaluated. Suicidal fantasy on one card might indicate considerable distortion of the stimulus properties, while on another card reflect only considerable respect for the objective stimulus. Our interest in administering such a series to a subject would be in his limen or threshold—at which card did he begin to talk about suicide—as well as in his total suicidal score. We are exploring the possibility of including within the scale some other measure which might yield an index of the possibility of acting on the suicidal tendencies indicated, or, to give it a psychoanalytic conceptualization, evaluate the adaptive aspects of ego functioning. The specific determinant might be anxiety (construct: add anxiety and one gets agitation, a significantly dangerous suicidal state) or guilt (construct: guilt coupled with fear stimulates expiatory hopes and activity, also a significantly dangerous suicidal state.)

These suggestions are not meant as "practical" in the sense of our rushing to construct another test for the Psychological Corporation catalogue. Dr. Friedman, in his critique of our paper published in the September 1958 issue of the *Journal of Projective Techniques* (5), after indicating that our suggestion appears to be an approach which might reduce the thorny problem of collating, averaging, or adding heroes as well as an attempt to put subjects on the same measuring scale with reference to particular personality variables, then goes on and lists some misgivings about this notion, which essentially have to do with quantification of the data as opposed to the more global approach. Parenthetically, we might say that Dr. Friedman sent us a copy of his Critique before it was published, and we were asked if we wished to answer it. We were hardly in a position to rebut his paper inasmuch as we agreed with (or had stated) everything which he said. However, we see no reason why we should not pursue this avenue of approach, if for no other reason than to see where it might lead. In this sense, we find the current efforts in the field of thematic testing vastly exciting in that they continue to suggest new procedural techniques as well as new conceptualizations of human behavior which may be useful in the exploration of personality.

REFERENCES

1. Bindra, D. Psychotherapy and the recovery from neurosis. *J. abnorm. soc. Psychol.*, 1956, 53, 251-254.

2. Cronbach, L. J., and P. E. Meehl. Construct validity in psychological tests. *Psychol. Bull.*, 1955, 52, 281-302.

3. Friedman, Ira. Objectifying the subjec-

tive: a methodological approach to the TAT. *J. Proj. Tech.,* 1957, *21,* 243-247.

4. Friedman, Ira. Characteristics of the TAT heroes of normal, psychoneurotic and paranoid schizophrenic subjects. *J. Proj. Tech.,* 1957, *21,* 372-376.

5. Friedman, Ira. A critique of Shneidman and Farberow's "TAT heroes of suicidal and non-suicidal subjects." *J. Proj. Tech.,* 1958, *22,* 281-283.

6. Kelly, G. A. Theory and technique of assessment. In *Annual review of psychology.* Stanford University Press, 1955.

7. Lesser, G. S. Conflict analysis of fantasy aggression. *J. Pers.,* 1958, *26,* 29-41.

8. Little, K. B., and C. L. Winder. A Scaled Thematic Test for aggression fantasy in children. (In preparation).

9. Murstein, B. I. Nonprojective determinants of perception on the TAT. *J. Consult. Psychol.,* 1958, *22,* 195-198.

10. Shneidman, E. S., and N. L. Farberow. TAT heroes of suicidal and non-suicidal subjects. *J. of Proj. Tech.,* 1958, *22,* 211-228.

11. Weiss, J. M. A. The gamble with death in attempted suicide. *Psychiat.,* 1957, *20,* 17-25.

Received December 8, 1958

Problems in the Validation of Projective Techniques

KENNETH B. LITTLE
National Institute of Mental Health, Bethesda, Maryland

We are discussing today the general issue of the validation of projective techniques. However, I will limit my remarks to the effective validity of such instruments rather than attempt to cover all forms of validation. "Effective validity" may be subsumed under predictive validity but is restricted to the class of useful predictions rather than any and all predictions.

In the clinical situation, where most projective techniques are administered, validity has a most pragmatic air. The construct validity of the instrument may be of theoretical interest to the psychologist and the concurrent validity an issue of some curiosity, but as far as the case in hand is concerned, one usually wishes to make meaningful and useful predictive statements about a patient. When one administers a Rorschach or a TAT to such a person, the implicit or explicit questions are of a rather prosaic sort: "Will this patient attempt suicide?", "Does he have some form of organic impairment?", "Would psychotherapy be an appropriate form of treatment?", and the like. The questions are those the psychologist, as a psycho-diagnostician, was hired to answer.

Other information may be, and usually is, provided in the test report. And certainly there is little expectation that the answers to the questions will reach such a degree of specificity as, "This patient will jump out of the ward bathroom window at 5:54 a.m. on Thursday." The report should include, however, statements about the subject that raise the probability of making correct assumptions as to his future behavior. The predictions involved may be quite indirect and dependent upon fairly complex chains of inferences but if personality assessments are to be other than exercises in composition, some information with implications for behavior must be included. It is the accuracy of the significant predictions, the correctness of the answers to the perennial questions, that may be called effective validity.

After this preamble, it is somewhat embarrassing to have to say that the published evidence on projective techniques indicates that they have either zero or, at best, very low positive effective validity indices. Even in those studies with the most positive of results, correlations are of an order of magnitude which make predictions for the individual largely a waste of time.

This distressing state of affairs has been with us unchanged for a rather long period of time. During the 35 or so years in which, for example, the Rorschach has been subject to systematic investigation, the only noticeable change has been in the sophistication of design and analysis. Negative or ambiguous results, however, are just as disheartening when determined by an F ratio as when determined by a critical ratio.

The situation as described has been pointed out by several people, e.g., Cronbach, (4) so I will not spend time in citing evidence. Instead I would like to consider the questions of "Why?" and "What do we do now?". A definitive answer to either of these would still require far more time than is available in this paper so I will perforce be quite arbitrary about what I present.

An answer to the question of why our projective techniques fail so miserably at practical predictions is obviously required before any rational solutions can be proposed. However, the determinants involved in the failure are numerous and many and quite difficult to eliminate. The fact that behavior is a function of both the organism and the situation means that any prediction based upon evaluation of the former alone will always be a contingent one. Since the number of possible alternative stimulus situations is astronomical the problem of raising the validity of our instruments seems an impossible one. Fortunately humans as well as rats are capable of, and facile at, generalization, so it is possible to reduce the number of stimulus situation categories sharply. We are able to say that one man's candy is another man's brandy and call both consummatory responses, or oral behavior, *etc.* This inevitably leads to a loss in precision in the prediction of specific behavior so we find ourselves anticipating alcoholism when obesity in fact occurs. However, correlations of less than unity are a fact of life with which psychologists have already learned to live.

However, there are other issues having to do more directly with the assessment process and with the instruments used. In our limited time, I wish to talk about two of these, one quite speculative and the other rather concrete. The speculative issue has to do with the interpretation of the basic postulate of projective testing, that of psychic determinism. The term "interpretation" is used deliberately since few people now argue that personality factors have no effect whatsoever on responses to projective technique stimuli. The rub occurs when we assume that all or a majority of the responses are determined by dominant and enduring characteristics, equally operative in the every day life of the individual as in the testing situation. The experienced tester allows for set, defensive factors unique to the particular situation, and the like in his interpretations. Then at this point he often assumes that what remains represents the regnant motives, ego-protective mechanisms, behavior style and so forth that characterize the individual in all situations. I wonder if this is necessarily the case. Perhaps all that is revealed is a micro-personality of limited extent.

This amounts to a questioning of the unity of the personality, its Gestalt quality. It does not deny psychic determinism but merely raises the query as to whether that aspect of the psyche involved in responding to semi-structured ambiguous stimuli is of any practical significance in the rest of man's behavior. During great stress when the individual is fighting for physiological or psychological survival, all forces are mobilized toward a common end and common response patterns may be apparent in all or most all situations. Under less extreme conditions perhaps the individual is far more differentiated than we expect, with a wide selection of response roles. Even in physiologic functions such an effect may be observed; systolic and diastolic blood pressure, for example, correlate .60 in subjects suffering from combat fatigue but the relationship drops to .06 after recovery (10). A similar phenomenon may occur among psychic functions.

The above, as stated earlier, is obviously speculative; there are, however, specific aspects of our assessment instruments towards which we can point with some assurance in the attempt to determine why they fail. These have been examined at some length by Anastasi (1), Cronbach (4), MacFarlane and Tuddenham (7), and others, so I will discuss only the sampling problem.

In the Rorschach one has ten stimuli and from ten to sixty or so responses; in the TAT twenty pictures eliciting hopefully twenty stories; in other projective techniques a varying number of stimuli but of a similar order of magnitude. With these stimuli we secure a small sample of the behavior of the individual and assume it is representative of his total population of imaginative responses. Then to make life even more difficult we attempt to "measure" five to seventy-five different variables with this one sample. The wise tester soon learns to restrict his assessment endeavor but typically we find that we are still assigning values to the variables we *do* use on the basis of one or two responses. Since these few responses are simply a sample of a number of potential responses to the stimuli, the reliability of the measurement is quite questionable. The projective technique interpreter is in a position analgous to that he would be in if one took a random sample of 50 items from the MMPI, permitted the subject the option of answering them in any fashion he chose (including not answering them at all) and then asked the psychologist to describe the MMPI profile. Depending upon the sample of items, the subject's choice of answer categories, and the tester's knowledge of the MMPI scales, there might be an occasional fairly correct reproduction of the whole profile, a slightly more frequent fair approximation of one or two scale scores and, most probably, an overall accuracy index that resembled strongly the validity co-efficients for projective techniques.

Since others on the symposium have discussed this point also, I would like to turn to my second question, *i.e.,* what do we do now. This discussion I will limit to some suggestions regarding increasing the precision of measurement of projective techniques.

There are several different ways in which this might be done—all relatively painful. The first, which continues the idiographic global approach, would be simply to increase the length of the current instruments — a Rorschach of 50 cards, a TAT of 100, for example. It is theoretically possible in this fashion to secure enough replicated information about a subject to determine the interrelations among personality characteristics and to enable us to specify the links between personality structure and behavior.

I do not have much hope for such a procedure; increasing the size of our global instruments will increase proportionately the amount of irrelevant information to be handled, placing a still greater load on the intellectual and experience level of the clinician. Unless we are to increase training time indefinitely it is almost mandatory that our instruments do a certain amount of pre-digesting for us, sacrificing coverage for precision. As Tomkins and Miner describe it (9) we must be prepared to throw away information in order to raise the probability of correctness of that we do obtain.

If we adopt such an austerity program, there appear to be two modes of approach which might be used. The first way might be considered analogous to the item analytic techniques used in objective test construction. The literature on the existing techniques can be searched for stable and hopefully useful determinants of responses to projective stimuli and special scales constructed for their measurement. After construction of the scale, there will be a long and tedious period of establishing the empirical correlates of the scale. A good example of this method is Barron's (2) M scale for measuring the human movement response to ink blots. If such single determinant scales are too molecular, then additional scales can be constructed for configural combinations; the essential point is that there be sufficient stimuli for reliable measurement.

The second approach is the construction of projective instruments designed to measure specific personality variables within certain theoretical frameworks. The Blacky Test (3) incorporates this idea to some extent but still attempts to measure too many variables with too few items. For precision of measurement, a minimum of about five reasonably independent projective "items" seems essential. Some of the sentence completion tests (Forer (5) and Rotter and Rafferty (8)) might be considered illustrations of this approach. McClelland's use of the TAT pictures for assessing Need Achievement also is a method of measurement that can be considered of this type.

A final example of a thematic projective technique devised for measurement of a specific personality characteristic is one developed by C. L. Winder and myself. It is similar in its general construction to an instrument developed quite independently by Lesser (6). This test which has no formal title is designed to tap two aspects of the fantasy life of boys—fantasy aggression and fantasy aggression anxiety. In constructing it we started with 100 pictures drawn by an artist to represent a variety of boy-boy, boy-girl, and boy-adult interactions and with varying degrees of pull for aggressive response. The subjects wrote stories to the pictures under general TAT type instructions. Reliability of scoring is better than .92 and split half reliabilities (alpha coefficients) range between .71 and .88 depending upon the type of aggression fantasy, *e.g.* boy-boy, boy-adult, being assessed. Since this is but the first round of refinement we hope to increase those reliability figures somewhat.

Such instruments as this last demonstrate very well the advantages and disadvantages of the projective inventory approach. A tremendous amount of information is sacrificed in the interest of precision, without, it should be added, with any guarantee that the resulting scores will be any more useful for predicting behavior than the global assessment. But since the global methods do not appear to work, we must, of necessity, try something else. Such inventories, moreover, do not permit the integration of multiple factors into a unique personality description, at least when administered singly. However, since it is my belief that unique descriptions that do not generate accurate predictions are merely works of art and not clinically mean- taking.
ingful, I think the gamble is worth

There are other experimental variations of projective techniques such as the PAT (9) which time does not permit me to discuss. They represent, I think, a very healthy trend toward exploration of all possible methods for personality assessment. If projective techniques are to be other than examples of the ingenuity of psychologists and their interpretation other than a measure of the clinicians verbal ability, then some modification of our present instruments is essential.

References

1. Anastasi, A. *Psychological testing.* New York: Macmillan, 1954.

2. Barron, F. Threshold for the perception of human movement in inkblots. *J. consult. Psychol.*, 1955, *19*, 33-38.

3. Blum, G. S. *The Blacky Pictures: A technique for the exploration of personality dynamics.* New York: Psychological Corp., 1950.

4. Cronbach, L. J. Assessment of individual differences. In Farnsworth, P. R. (Ed.), *Annual review of psychology.* Stanford, Calif.: Annual Reviews, 1956.

5. Forer, B. R. A structured sentence completion test. *J. proj. Tech.*, 1950, *14*, 15-29.

6. Lesser, G. S. Conflict analysis of fantasy aggression. *J. Personal*, 1958, *26*, 29-41.

7. MacFarlane, J. W., and R. D. Tuddenham. Problems in the validation of projective techniques. In H. H. Anderson and G. L. Anderson (Eds.), *An introduction to projective techniques.* New York: Prentice Hall, 1951.

8. Rotter, J. B. and J. E. Rafferty. *Manual for the Rotter Incomplete Sentences Blank, college form.* New York: Psychological Corp., 1950.

9. Tomkins, S. S. and J. B. Miner. *The Tomkins-Horn Picture Arrangement Test.* New York: Springer, 1957.

10. Wenger, M. A. *Studies of autonomic balance in Army Air Forces personnel. Compara. Psychol. Monogr.*, 1948, *19*, No. 4.

Received December 8, 1958

Further Check on the Diagnostic Validity of the Ames Danger Signals

LOUISE BATES AMES
(With the assistance of MARJEAN KREMER)
Gesell Institute of Child Development

An earlier study of child Rorschach responses (1) has demonstrated that many kinds of response customarily considered as indicative of disturbance or even of pathology in the adult, occur not only benignly but even normatively in the child subject. Particularly at such ages as 3½ and 7 years, the apparently typical Rorschach response includes several conspicuous features which would suggest disturbance in the adult.

Nevertheless, in spite of the apparent normality of many traditional danger signs when such responses appear in the child's record, we know that the clinician who works with children does depend on the Rorschach for clues as to the nature and degree of disturbance in presumably disturbed child subjects. Thus we face the problem — which kinds of responses customarily considered to be danger signals actually do characterize the response of children judged on other measures to be "disturbed" children.

We ourselves tentatively identified a list of thirteen signs which seemed to us potentially indicative that a subject was in real difficulty. The first attempt at validating this list of danger signals is that of Elkins (3). Of the thirteen "Ames danger signals" suggested by us, Elkins dropped four as involving subjective judgments, and then increased the number of signs to be tested to a total of thirteen because of the necessity of treating the parts of four complex signs as separate signs. Her list, then, included the following:

1. Preponderance of tree or leaf responses (Preponderance defined as over 50% of R).
2. F% exceeds 75.
3. More than one pure color response.
5A. More than one response involving differentiated shading.
5B. More than one response involving diffuse, dysphoric shading, i.e. Clob.
6. More than one inanimate movement response.
8. W% less than 40.
9A. Dd% over 15. Dd% equals Dd, S, and Do responses over total R.
9B. More than one X response.
9C. More than one S response.
10A. A% over 60.
10B. No human response (i.e. no H; Hd not counted).
11. R less than 10.

Elkins selected a group of forty presumably normal 8, 9 and 10 year olds matched for sex, age and I.Q. with a group of forty children who had been referred to the Institute for Juvenile Research in Chicago as being in need of child guidance services. The Rorschach was given to each of these subjects.

Following careful procedures, Elkins checked these records for presence or absence of the suggested "danger signs", and then compared the total scores for the clinic and nondisturbed groups, by means of a variation of McNemar's Formula 26 for the evaluation of the difference between two correlated means. The resulting figures showed that "the clinic, or presumably disturbed, group had significantly *fewer* danger or maladjustment signs than did the nondisturbed group."

A more detailed analysis by individual signs indicated that "most of the Ames danger signals are not useful for differentiating between clinic and nondisturbed samples of 8 to 10-year-olds because nearly half of the signs are either characteristically present in a sizeable proportion of both normal and clinic cases, or else are almost never found in the records of either . . . The most promising signs which discriminate in the expected direction are pure C > 1, more than one diffuse, dysphoric shading response, and $m > 1$. These signs, like contamination for schizophrenia, are apparently diagnostic when they occur, but have such limited incidence as to be of little use for routine screening purposes."

Such extremely negative findings suggest to us two possibilities. The first is that even to a greater extent than we had suspected, the kinds of Rorschach response often considered, especially in the adult, to be indicative of disturbance, have a benign significance when they occur in the records of children. (Our earlier study had, in our opinion, ruled out as danger signs many kinds of response often considered to be dangerous, but we had nevertheless offered tentatively as possible danger signals the thirteen signs tested by Elkins.)

An alternative possibility, and one which we favored, was that Elkins' clinic population of forty subjects, whose records did not show a significant number of our suggested danger signs, were perhaps not seriously disturbed children. Elkins herself feels convinced that "the clinic population tested represented a really disturbed group". In fact she is more convinced of this than that her "nondisturbed group was an ideally normal population."

However, it has been our finding in clinical practice that a large majority of children brought to us for clinical help, are not what we consider seriously disturbed children.

The present study duplicates Elkins' investigation, with the possible exception that we took great care that our disturbed population was made up only of subjects whom we had previously classified as clearly disturbed, and that we used boys only.

Subjects and Methods

Records of all clinical cases between the ages of 6 and 12 years, seen at the Gesell Institute of Child Development during the five years from June, 1953 to June, 1958 were reviewed by means of reading over case-conference notes. All cases where the case-conference exclusive of the Rorschach, which was not considered, indicated "emotional instability", "emotional disturbance", "need for therapy", were then checked with the summary of these cases written by Dr. Frances Ilg, Director of the Clinical Service. Only those cases were selected which were labelled by Dr. Ilg as clearly disturbed.

Since in this total group of cases, records of only six girls were included, it was decided to use boy subjects only. In order to make up a total of fifty cases, records from the six month period from January to June, 1953 were included. This final total of fifty subjects whom Dr. Ilg considered to be clearly unstable or disturbed, were thus chosen from a total of approximately three hundred records of boys of ages between 6 and 12 years.

Only children with I.Q.'s rated as average or better were included.

A control group of fifty presumably normal subjects was chosen from among our normal research population as follows. All disturbed cases were checked for age, I.Q., and father's occupation. Then a research assistant (MJK) selected from among our normal population cases which matched the disturbed cases for age, I.Q. and father's occupation.

SES and intelligence ratings for the two groups are given in Table I. Similarity of the two groups is marked. The largest numbers of subjects in both groups are from the professional or semi-professional classes. Only 7 of the disturbed subjects and only 8 of the normal group fall below Class III, that of clerical, retail business or semi-skilled occupations. As to intelligence, largest numbers in both groups fall in the average category, next most in high average. Only 8 of the disturbed subjects, only 6 of the normals are unclassified — thus possibly below average.

During the selection of these two groups, the normal and the disturbed, the Rorschach records were not consulted nor considered. That is, neither the "disturbed" nor the "normal" sub-

TABLE I—Socio-economic Status and Intelligence of Subjects

Class	No. normal subjects	No. disturbed subjects
	Socio-economic status	
I	16	16
II	15	16
III	11	11
IV	—	—
V	5	6
VI	1	—
VII	—	—
?	2	1
	Intelligence ratings	
Very superior	1	2
Superior	9	7
High Average	15	9
Average	19	24
Unclassified	6	8

jects were selected on the basis of their Rorschach performance. Once selected, however, both groups of cases were then checked for the occurrence of possible "danger signals" in the Rorschach records. Our original 1952 list which, in a slightly modified version (3, p. 283) was tested by Elkins, is as follows:

1. A preponderance of leaf or tree responses, particularly if given perseveratively, after 4 or 5 years of age. Also static perseveration of any simple one-word response.
2. After 5 years of age, more than 75%F.
3. More than one pure C is suspect.
4. Color naming is suspect after 5 years.
5. More than one shading or clob in a normal length record.
6. More than one m.
7. Contamination after 5½ and confabulation after 7.
8. Less than 40 to 50%W.
9. More than 10 to 15%Dd. Especially more than one Do or more than one S.
10. Over 60%A. Less than one H.
11. After 3½ years, a total of less than 10R.
12. Position responses.
13. Other behaviors which are at least suspect are the giving of extremely bizarre responses, inability to cope at all with the test, excessive manipulation, or particularly odd manipulation.

Subsequent experience with the Rorschach test in children has led us to make the following modifications of this list:

1. "Preponderance of leaf or tree responses" was modified to read, "Three or more leaf or tree responses, or 15% or more of total content."
2. 75% F or more was changed to the probably more significant F%>F+%.
3. "One or more C" was changed to "Any C or color naming."
4. "More than one shading or Clob in a normal length record" was modified to "Any variation of Clob or C′."
5. "More than one m" was changed to "Three or more m or m > M + FM.
6. Area was omitted as a criterion except for "25% or more Dd or more than one Do."
7. "Over 60%A" was raised to "Over 70%A."
8. "Less than one H" was changed to "No H; or Hd: H is 2:1."

The following items were added:

1. "Elimination, sex or reproduction responses."
2. "Three or more anatomy, or 15% or more of the total content; or F— anatomy."
3. "Personal reference or more than one response suggesting trouble, as old, broken, decayed, damaged objects."

With these modifications, we arrive at the list of possible "danger signs" listed in Table II. This list, because of these changes, is slightly different in detail from the list which Elkins attempted to validate. However, it is similar; and since our aim is to discover what kinds of Rorschach responses are danger signals, and not merely to "defend" our original list, these variations in the original list seem permissible.

Table II lists all proposed danger signals and indicates the number of instances, out of 50 normal and 50 disturbed subjects, paired, in which both of the pair, neither of the pair, only the disturbed subject or only the non-disturbed subject showed the sign. It also indicates what percent of each group show each sign, and includes a statistical measure of significance.

Mean number of these proposed signs in our normal group is 1.6; in our disturbed group, 5.0. There is a statistically significant difference (t=15.90) between these figures. However, as Table II shows, some of the individual measures within this list are more effective than are others in distinguishing between normal and disturbed subjects.

TABLE II—Incidence of "Danger Signals" in Matched Pairs of Clinic and Nondisturbed Subjects

	Sign occurs in					Percentage of occurrance	
Danger signal	Both of pair	Neither of pair	Only non-disturbed	Only clinic	Chi-square[a]	Non-disturbed	Clinic
1a. Less than 10R	5	31	4	10	1.79	18%	30%
1b. Excessive manipulation	0	38	0	12	10.08**	—	24%
2a. More than 25%Dd	1	41	3	5	.12	8%	12%
b. More than 1 Do	1	39	2	8	2.50	6%	18%
3. F% exceeds F + %	2	29	2	17	10.31**	8%	38%
4. 3 or more m; or m = or >M + FM	0	36	4	10	1.79	8%	20%
5. 1 or more C or Cn	4	19	8	19	3.70	24%	46%
6. 70%A or more	0	36	3	11	3.50	6%	22%
7. No H; or Hd:H = 2:1 or more	4	27	3	16	7.58**	14%	40%
8. Static perseveration	0	35	0	15	13.06*	—	30%
9. Contamination	0	33	1	16	11.53**	2%	32%
10. Confabulation	2	28	3	17	8.45**	10%	38%
11. Position response	2	42	0	6	4.17*[b]	4%	16%
12. Leaf or tree — 3 or 15% of content	0	43	2	5	.53	4%	10%
13. Elimination or sex	1	43	0	6	4.17*[b]	2%	14%
14. Anatomy — 3 or more or 15%; or F— anatomy	0	37	6	7	.00	12%	14%
15a. Bizarre content	3	26	1	20	15.43**	8%	46%
b. Personal reference	0	41	1	8	5.33*	2%	16%
c. Troubled content	4	18	4	24	12.90**	16%	56%
16. Dysphoric shading: variations of Clob or C′	0	39	3	8	1.45	6%	16%

[a] Corrected for continuity (McNemar's Formula 86a).
[b] Less than 10 subjects.
* Significant at .05 level.
** Significant at .01 level.

As this table indicates, 7 of our proposed measures do show a significant difference between normal and disturbed groups either at the .05 or the .01 level. Two others show significance at the .05 level though there are fewer than ten subjects involved, which makes the measure of significance of questionable value. Two further signs — 1 or more C or Cn, and 70%A or more — fall just below the .05 level of significance.

This gives a total of 11 of the proposed 16 measures which either show statistically significant differences between the two groups, or differences which are close to statistical significance. This list includes the following signs which do appear to a statistically significant extent to distinguish disturbed from non-disturbed subjects:

1. Excessive manipulation.
2. F% exceeds F+%.
†3. One or more C or Cn.
†4. 70%A or more.
5. No H, or Hd: H is 2:1 or more.
6. Static perseveration.
7. Contamination.
8. Confabulation.
*9. Position response.
*10. Elimination or sex response.
11. Bizarre content; personal reference; troubled content.

† Falls just below the level of statistical significance at the .05 level.

* Fewer than 10 instances.

Of the proposed danger signs, that is of the kinds of response which we have been inclined to consider as possible trouble indicators, the following did not occur significantly more in our disturbed than in our normal population:

1. More than 25%Dd or more than one Do.

2. Three or more m.
3. Three or more leaf or tree responses.
4. Three or more anatomy responses or F— anatomy.
5. Dysphoric shading.

Number of Danger Signs Present

Perhaps equally important or even more important than the actual nature of disturbance signs in any given record, in detecting emotional disturbance on the part of the subject, is the *number* of such signs present in any one record.

Table III which presents the frequency of occurrence of *proposed* danger signs, and Table IV which gives the frequency of those which turned out to be *significant,* and also the cumulative percentages of distribution, show clearly the quantitative differences in number of signs present in normal and in disturbed records. Only two out of 50 normal subjects have more than three of the initially proposed danger signs, and more than half have either one or none. Conversely, only seven of the disturbed subjects have as few as three of the proposed signs. By percentages, only 4% of the normal group have four or more signs, whereas 86% of the disturbed subjects have four or more. Mean number of these signs in the normal group is 1.6; in the disturbed group, 5.0. The difference is statistically significant.

Considering merely those signs which turned out to occur with a statistically significant frequency more often in the disturbed than in the normal group, equally conspicuous differences exist. Only five normal subjects have more than one sign, whereas only two of the disturbed subjects have less than two. By percentages, only 10% of the normal group have two or more signs, whereas 90% of the disturbed have two

TABLE III—Frequency of Occurrence of Proposed Danger Signs and Cumulative Percentage Distribution

No. of Signs[a]	Number of subjects giving each number of signs: Normal	Disturbed
0	6	0
1	22	0
2	12	0
3	8	7
4	1	13
5	0	13
6	0	7
7	1[b]	7
8	0	3
Mean	1.6	5.0 ($t=15.90$)

No.	Cumulative percentages: Normal	Disturbed
1 or more	88	100
2 or more	44	100
3 or more	20	100
4 or more	4	86
5 or more	2	60
6 or more	2	34
7 or more	2	20
8 or more	0	6

[a] This counts one score to a numbered sign even though a and b may both be present.

[b] A 7-year-old boy now seems probably disturbed, but who was included in our initial study as coming from a regular school group and judged normal by the teacher.

TABLE IV—Frequency of Occurrence of Significant Danger Signs and Cumulative Percentage Distribution

No. of Signs	Number of subjects giving each number of signs: Normal	Disturbed
0	26	0
1	19	2
2	4	14
3	0	19
4	1	8
5	0	6
6	0	0
7	0	1
Mean	.6	3.1 ($t = 12.88$)

No.	Cumulative percentages: Normal	Disturbed
1 or more	48	100
2 or more	10	96
3 or more	2	68
4 or more	2	30
5 or more	0	14
6 or more	0	2

or more. Mean number of these signs in the normal group is .6; in the disturbed group, 3.1. The difference is statistically significant.

AGE DIFFERENCES IN NUMBER OF DANGER SIGNALS

Our earlier study (1), which suggests that quite different kinds of responses characterize different age levels so far as the Rorschach response is concerned, leads us to the question – do danger signals occur more, either for normal or for disturbed subjects, at some ages than at others? Tables V and VI present data on this subject. Mean numbers of danger signals at each age for both groups are given, both for all proposed danger signals, and then for only those proposed danger signals which turned out to be statistically significant.

When the entire list of proposed danger signals is considered, it appears that in our normal group, the largest number of these signs occur at 6 and at 7 years of age. For the disturbed group, high points for the occurrence of such signs are 6 years and 9 years, though at all ages except 12 years, four or more such signs occur and there is little difference in number from one age to another.

Counting only the significant signs, 7 years appears to be the high point of occurrence in our normal group, 6 years in the disturbed group, with a subsequent steady decrease in number except at 9 years when there are a few more than at 8 years.

TABLE V—Mean Number of Proposed Danger Signs per Child — Normal and Disturbed Subjects, at Increasing Age Levels

Age	No. of subjects	Number of signs Normal group	Number of signs Disturbed group	*t* Test
Mean, total group		1.6	5.0	15.90*
Median, total group		1.0	5.0	
6 yrs.	6	2.1	6.1	
7 yrs.	7	2.8	4.8	
8 yrs.	7	1.6	4.8	
9 yrs.	7	1.5	5.3	
10 yrs.	12	1.1	5.0	
11 yrs.	8	1.1	4.4	
12 yrs.	3	1.0	4.0	

* Significant at .01 level

TABLE VI — Mean Number of Significant Danger Signs per Child—Normal and Disturbed Subjects, at Increasing Age Levels

Age	No. of subjects	Number of signs Normal group	Number of signs Disturbed group	*t* Test
Mean, total group		.6	3.1	12.88*
Median, total group		.0	3.0	
6 yrs.	6	.8	4.1	
7 yrs.	7	1.3	3.2	
8 yrs.	7	.7	3.0	
9 yrs.	7	.5	3.4	
10 yrs.	12	.3	2.7	
11 yrs.	8	.2	3.0	
12 yrs.	3	1.0	2.0	

* Significant at .01 level

Our earlier study suggests that of the 16 danger signs proposed here, none are found normatively except at 7 years of age, at which time C responses, confabulation, and bizarre, morbid or troubled content may occur in presumably normal subjects.

DISCUSSION

The "sign" approach to the diagnosis of personality difficulty as revealed by the Rorschach, though generally useful to clinicians, has not as yet been validated by experimental study. Even should research support such an approach, as the present study appears to do, most clinicians agree that it should never be used by those unskilled and inexperienced in clinical work with the Rorschach to take the place of thoughtful and painstaking evaluation of any individual protocol.

An examiner's total impression of a Rorschach response will in most cases reveal much more than any checking of a list of signs, no matter how adequate that list may be. Thus, emotional disturbance in a child subject is revealed by such things as going over and over the same blot area, by consistent dissatisfaction with responses, by extreme unevenness of responses, by presence of various kinds of shock responses (as described by Phillips and Smith (6). Or, as Halpern (4) points out, emotionally disturbed children have innumerable ways of responding which emphasize their emotional disturbance. Some "emphasize control, conformity, and compliance, feeling a need to repress aggression and accept the dictates of authority. Thus they show marked constriction and inhibition." Others may go to the opposite extreme.

Or, with more seriously disturbed subjects, according to Halpern, "There are disturbances in identification, disorganizing anxiety, defects and distortions in reality testing beyond what could be ascribed to immaturity, and an inability to establish satisfying object relations."

Thus it should be made clear that:

1) The mere checking of a list of danger signs, no matter how adequate this list may be, should never be relied on to identify disturbance in the child subject, since it is the total impression of the record which most clinicians consider to give the most significant clues.

2) The signs suggested by us in this paper, as possible danger signs, are by no means original with us. All have been considered at one time or another or by one investigator or another to be at least suspect when found in child records.

The aim of the present paper is merely the comparison of records from a group of presumably normal subjects with records of a group of subjects comparable as to intelligence and socio-economic status, but considered to be emotionally disturbed, to determine whether or not a series of supposed danger signs occurs to a statistically significant degree more in the disturbed than in the normal group.

Such a check has heretofore been made only, to our knowledge, by Elkins, who found that such signs do not occur more in a disturbed than in a normal group. The present study indicates that a list of such signs, if carefully selected, does distinguish the two groups — occurring more in the disturbed than in the normal subjects.

SUMMARY

Rorschach records of fifty boys between the ages of 6 and 12 years, seen by the clinical service of the Gesell Institute and classified as emotionally disturbed were matched with records of fifty "normal" research cases, for age, sex, intelligence and socio-economic status.

These pairs of records were compared for presence of 16 proposed "danger signals." This list of danger signals is a slight modification of a list first proposed in an earlier study (1), and recently checked by Elkins (3) who found that her non-disturbed group actually expressed a higher number of these signs than did her disturbed group, all of whom were subjects referred to a clinic as being in need of child guidance services.

Assuming that by no means all children referred to a child guidance clinic are actually "emotionally disturbed", we selected from over 500 clinical referrals seen by us in the last five years, fifty boys whom, judged on other responses than the Rorschach, we had classified as clearly emotionally disturbed.

When their Rorschach records were checked against records of fifty matched "normal" cases, it appeared that seven of sixteen proposed measures occur conspicuously more in the disturbed cases, showing a significant difference between normal and disturbed subjects either at the .05 or the .01 levels. Two other signs show significance at the .05 level though fewer than ten subjects were involved, making the measure of significance of questionable value. Two further signs fall just below the .05 level of significance.

The eleven signs which thus appeared to a conspicuously greater extent in disturbed than in non-disturbed subjects are:

1. Excessive manipulation.
2. F% exceeds F+%.

3. One or more C or Cn.
4. 70% A or more.
5. No H, or Hd: H is 2:1 or more.
6. Static perseveration.
7. Contamination.
8. Confabulation.
9. Position response.
10. Elimination or sex response.
11. Bizarre content; personal reference; troubled content.

As to the number of danger signals present per case, if we consider all sixteen signs as proposed, only two of the 50 normal cases showed more than three of these signs, and more than half had either one or none. Conversely, only seven of the disturbed subjects have as few as three of the proposed signs. Mean number of these signs in the normal group is 1.6, in the disturbed group, 5.0. This difference is statistically significant.

Considering only those signs which occur with a statistical significance more frequently in the disturbed than in the non-disturbed group, only five normal subjects have more than one sign, while only two of the disturbed subjects have less than two. Of these signs, the mean number in the normal group is .6, in the disturbed group is 3.1. This difference is statistically significant.

These danger signs occur most in normal subjects at 7 years of age, in the disturbed group at 6 years. However, an earlier study (1) suggests that C, confabulation, and morbid bizarre or troubled content may occur at 7 years of age in presumably normal subjects.

Thus, in conclusion, it appears that seven of a list of sixteen proposed danger signs do occur to a statistically significant extent, more in a group of emotionally disturbed subjects than in a group of normal subjects matched for age, sex, I.Q. and socio-economic status. Four others occur just below a statistically significant level.

However, it should be noted that in our opinion a sign list, though useful in detecting emotional disturbance as reflected in the Rorschach response, should not be relied on as the sole measure of disturbance. The total configuration of the response must always be considered.

REFERENCES

1. Ames, Louise B., Learned, Janet, Métraux, Ruth W. and Walker, R. N. *Child Rorschach responses: developmental trends from two to ten years.* New York: Hoeber-Harper, 1952.

2. Davidson, Helen H. A measure of adjustment obtained from the Rorschach protocol. *J. proj. Tech.*, 1950, *14*, 31-38.

3. Elkins, Elise. The diagnostic validity of the Ames "Danger Signals". *J. consult. Psychol.*, 1958, *22*, 281-287.

4. Halpern, Florence. *A clinical approach to children's Rorschachs.* New York: Grune & Stratton, 1953.

5. Institute of Child Welfare, University of Minnesota. *The Minnesota Scale for Paternal Occupations.* Minnesota. No date. (Pamphlet.)

6. Phillips, L. and Smith, J. G. *Rorschach interpretation: advanced technique.* New York: Grune & Stratton, 1953.

7. Piotrowski, Z. A. *Perceptanalysis: A fundamentally reworked, expanded, and systematized Rorschach method.* New York: Macmillan, 1957.

Received January 16, 1959

Sex Identification at Different Ages Using the Draw-A-Person Test

R. L. BUTLER and F. L. MARCUSE
State University of Washington

The evidence bearing on both the incidence and significance of the sex of the first figure drawn, when Ss are told to draw a person, is confused and inconclusive. Brown and Tolor in a review of the literature bearing on this question have stated that "testing of a careful representative sample of each age group throughout early and later childhood is very much needed in order to investigate developmental changes or differences" (1, p. 207). Several studies (2, 4, 5) offer evidence to support the hypothesis that while the great majority of normal adult males draw their own sex first, it is quite common for normal adult females to draw the opposite sex first. These studies would suggest that approximately 85 per cent of males draw their own sex first while the corresponding figure for females is in the neighborhood of 60 per cent.

The assumption is made that boys and girls will also show this same sex difference in their drawings. Such an assumption tends to be *a priori*. In a study by Weider and Noller (6), it was reported that of 73 boys and 80 girls, between the ages of 8 and 10, of normal intelligence and from upper middle and lower socio-economic groups, 74 per cent of the boys and 97 per cent of the girls drew self-sex figures first. This is contrary to what occurs in adults. In another study Jolles (3) attempted to provide developmental information on children's drawings. This investigator was concerned, among other problems, with the question as to which sex children of grade school age tend to draw first. For this purpose he collected drawings, using the H-T-P test, from 8,500 children of ages 5-12, whose grade placement ranged from kindergarten to sixth grade. These children were located in five towns in Illinois. He found that of a sample of 1282 boys, of different ages, 85 per cent drew the male figure first and that of a sample of 1278 girls, of different ages, 80 per cent drew the female figure first.

Both the findings of Weider and Noller (6) and the results of Jolles (3) suggest that school age children do not order the sequence of sexes as do adult groups. Both studies however pose certain questions. Was the work of Weider and Noller representative?[1] Was their total number of Ss adequate? In Jolles study, did the fact that the classroom teacher administered the test have any effect? On what basis was the sample of approximately thirty per cent (2560) selected from the original 8500 drawings? Did his procedure of combining different ages conceal developmental changes? The problems posed by such questions were the subject matter for the present investigation.

PROCEDURE

All students who were enrolled in the Pullman, Washington schools and who were present on the days when the drawings were obtained, served as Ss for this study. Drawings from 810 boys and 734 girls from 5 to 18 years of age and from kindergarten to twelfth grade were obtained. A total of 1444 drawings representing 83.3 per cent of all pupils attending Pullman schools were secured (a measles epidemic had lowered the number somewhat). In addition to this figure of 1444, 100 drawings, 49 girls and 51 boys, were procured from a private kindergarten.[2]

---

[1] This study was done in partial fulfillment of the requirements for the degree of Master of Science in Psychology at the State University of Washington.

[2] The 100 private kindergarten pupils may not be a representative sample. However a public kindergarten does not exist in Pullman.

TABLE I—Errors of Nine Judges Asked to Rate Drawings of Five to Eight Year Olds as Male, Female, or Ambiguous

		Judge								
Age		1	2	3	4	5	6	7	8	9
5 N=43	Male (N=25)	1	1	0	3	0	0	2	4	2
	Female (N=18)	4	9	0	2	5	0	4	2	2
	Ambiguous	17	8	29	11	17	28	12	18	16
	Total Error	22	18	29	16	22	28	18	24	20
	% Error	52	42	67	37	52	65	42	56	47
6 N=124	Male (N=51)	6	7							
	Female (N=73)	2	3							
	Ambiguous	13	11							
	Total Error	21	21							
	% Error	17	17							
7 N=147	Male (N=77)	2	4							
	Female (N=70)	7	1							
	Ambiguous	9	7							
	Total Error	18	12							
	% Error	12	8							
8 N=146	Male (N=81)	5	0							
	Female (N=65)	1	3							
	Ambiguous	4	6							
	Total Error	10	9							
	% Error	7	6							

Ss were tested in a group with the teacher out of the room. Each class, consisting of approximately 25 Ss, was given ten minutes to complete a single drawing. The following instructions,[3] the same for Ss at all ages, were read to each group by the E. "On the sheet of paper you now have, I want you to draw somebody. You may draw the person any way you want. I am not interested in how well you draw, I just want to know how you would try to draw somebody. Please do this yourself. Do not look at anybody else's paper. Go ahead and draw one person." All questions were answered with "You may do it any way you like—do whatever you think best." At the end of the ten minute period the E collected each drawing and at the kindergarten and elementary levels asked each S the sex of the figure drawn. In addition, the age (to the nearest year), grade, and sex of the S were also recorded by the E. At the junior high level and up, the above procedure was slightly changed and Ss were told, at the end of ten minutes, to record this same information on the back of their drawing.

At each age the percentage of males drawing males, males drawing females, females drawing females, and females drawing males was determined. Tables and a curve were then derived from these data in order to provide normative figures and to see whether there was an age range at which the sexes diverged in the tendency to draw self-sex figures in response to the directions, draw a person.

Jolles (3) had reported that only one per cent of the drawings of five year olds were ambiguous as to sex, but pilot data[3] had cast doubt on this statement. Consequently nine judges were given the drawings of the five year olds with the following instructions: "Please separate these drawings into a male pile and a female pile. If the sex of a figure is ambiguous or indeterminate to you, place it in a third pile." Two of the judges also did this for ages six, seven and eight. The age level involved was unknown to the judges and the two judges who made evaluations for ages five through eight were presented the drawings of the different age groups in random order.

---

[3] A pilot study was made in a nearby Colton, Washington school to determine whether younger Ss would have any difficulty understanding the instructions and whether the time period (10 minutes) alloted was adequate. Both were found to be satisfactory. Only 1 of 1545 drawings had to be discarded.

RESULTS

Table I shows the errors of the nine judges who were asked to rate the drawings of the five year olds as male, female, or ambiguous (indeterminate). Since the sex of the drawn figure was known, judgments of male when the figure drawn was intended to be a female, female when the figure drawn was intended to be a male, or the judgment of ambiguous were all considered errors. For example at age five, judge four (Table I) had designated 3 of the male drawings as female, 2 of the female drawings as male, 11 of the drawings as ambiguous and thus had a total of 16 errors (37%). Judge three found 29 of the five year old drawings to be ambiguous and thus made a total of 29 errors (67%). The mean percentages of error of the nine judges in this study, for the drawings of the five year old Ss, was 51. This is not in accord with the one percent figure for this age reported by Jolles (3). The results of the two judges who also classified the drawings of the six, seven and eight year olds, showed a decrease in the number of errors as the age of the Ss increased, although even at age eight the sex of the figure drawn was not always obvious.

TABLE II—Sex of First Figure Drawn by 810 Males 5 to 18 Years of Age

Age	Male		Female	
	No.	Percent	No.	Percent
5 (N=26)	18	69.2	8	30.8
6 (N=51)	38	74.5	13	25.5
7 (N=77)	59	76.6	18	23.4
8 (N=81)	71	87.7	10	12.3
9 (N=81)	70	86.4	11	13.6
10 (N=82)	75	91.5	7	8.5
11 (N=73)	70	95.9	3	4.1
12 (N=66)	56	84.9	10	15.1
13 (N=79)	75	94.9	4	5.1
14 (N=51)	49	96.1	2	3.9
15 (N=48)	47	97.9	1	2.1
16 (N=39)	38	97.4	1	2.6
17 (N=39)	38	97.4	1	2.6
18 (N=17)	16	94.1	1	5.9

Tables II and III show the distribution of drawings, according to the sex of the figure drawn, for males and females of 5 to 18 years of age. These facts and the fact that males and females tend to diverge at a certain age range on the drawing of self-sex figures are shown in Figure 1. A two-tailed test of significance showed that the probability was .002 that the differences obtained in the two curves of Figure 1, would occur by chance.

DISCUSSION

The data reported show the importance of having young Ss, especially below the age of eight, designate the sex of the figure drawn. Results show that the number of incorrect judgments concerning the sex of the figure drawn decreases as the age of a S increases.

In order to reduce the number of uncontrolled factors, the E, instructions, materials, and length of testing period were kept constant for all Ss. The findings of this study, with Ss above eight years of age, would support the results obtained with adult groups, namely that while both sexes tend to draw their own sex first on the DAP, males tend to draw significantly more self-sex figures than females. Below the age of eight, the tendency to draw self-sex or opposite-sex figures does not differentiate between boys and girls. This study then may be said

TABLE III—Sex of First Figure Drawn by 734 Females 5 to 18 Years of Age

Age	Male		Female	
	No.	Percent	No.	Percent
5 (N=17)	7	41.2	10	58.8
6 (N=73)	9	12.3	64	87.7
7 (N=70)	18	25.7	52	74.3
8 (N=65)	15	23.1	50	76.9
9 (N=74)	21	28.4	53	71.6
10 (N=76)	20	26.3	56	73.7
11 (N=70)	16	22.9	54	77.1
12 (N=51)	14	27.5	37	72.5
13 (N=77)	23	29.6	54	70.4
14 (N=42)	11	26.2	31	73.8
15 (N=49)	12	24.5	37	75.5
16 (N=36)	12	33.3	24	66.7
17 (N=23)	13	56.5	10	43.5
18 (N=11)	7	63.6	4	36.4

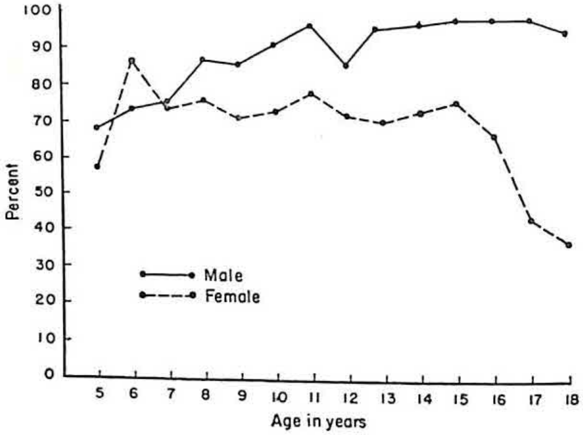


FIGURE 1. Percent of Male and Female Subjects Drawing Self-Sex Figures From Ages 5-18 Inclusive.

to yield results which both support and refute the idea that children behave like adults in their response to instructions for the DAP test. Whether the performance of children on the DAP is similar to or different from the performance of adults depends on age. The over-all results are interpreted as being related to the "dominance" (or incipient awareness of the dominance) of the male sex in the American culture as reflected in its attitudes, mores, customs, and institutions.

The present findings do not, as may be thought, have any implications for the latency period. According to Freud, the S in this period may show either reaction-formation or sublimation, in which case he might draw either the opposite or the self-sex figure. Therefore the assumption of a latency period is not open to scientific testing.

SUMMARY

The purpose of this study was to ascertain whether children, adolescents, and young adults, respond to the DAP as do adult groups. Some 810 boys and 734 girls between the ages of 5 and 18 were used as Ss. The results indicate that boys and girls above the age of eight do respond to the DAP like adult groups, but below the age of eight the tendency to draw self-sex or opposite-sex figures appears equally as strong in girls as in boys. The results are interpreted as having no bearing on the latency period but as reflecting a growing awareness among females of the dominance of the male sex in contemporary western civilization.

REFERENCES

1. Brown, D. G., and Tolor, A. Human figure drawings as indicators of sexual identification and inversion. *Percept. mot. Skills*, Monogr. Suppl. No. 3, 1957, 199-211.

2. Feather, D. B. An exploratory study in the use of figure drawings in a group situation. *J. soc. Psychol.*, 1953, *37*, 163-170.

3. Jolles, I. A study of the validity of some hypotheses for the qualitative interpretation of the H-T-P for children of elementary school age. 1. Sexual identification. *J. clin. Psychol.*, 1952, *8*, 113-118.

4. Mainord, Florence. A note on the use of figure drawings in the diagnoses of sexual inversion. *J. clin. Psychol.*, 1953, *9*, 188-189.

5. Starr, S. and Marcuse, F. L. Reliability in the 'Draw-a-person' test. *J. proj. Tech.* 1959, 23, 83-85.

6. Weider, A., and Noller, P. A. Objective studies of children's drawings of human figures. 1. Sexual awareness and socio-economic level. *J. clin. Psychol.*, 1950, *6*, 319-325.

Received October 15, 1958.

The Effect of Examiner Status Upon Rorschach Performance[1]

FRANCES A. CAMPBELL AND PAUL B. FIDDLEMAN
University of North Carolina

Several studies and theoretical analyses (2, 3, 7, 9, 10, 11, 12, 13, 14) indicate that situational variables may have an important influence upon Rorschach performance. The status of the examiner is one such variable not yet studied experimentally. The present research is directed primarily toward an experimental analysis of the influence of E's status, as perceived by S, upon S's Rorschach performance.

With the idea that more meaningful results might be obtained if the subjects were pre-selected on the basis of some psychologically relevant variable, the differential effects of need-achievement (hereafter referred to as n-ach) upon Rorschach performance under various status conditions were investigated. The n-ach scale of the Edwards Personal Preference Schedule (4) (hereafter referred to as EPPS) was used to measure this personality dimension.

An E's status might affect an S's Rorschach responses in a variety of ways. For exploratory work three measures were chosen as dependent variables most likely to be affected: the number of responses given to the cards, the number of whole responses given, and the range of content or number of content categories used (hereafter referred to as R, W, and NCC, respectively). Three predictions were made:

1. R, W, and NCC scores will be greater under high status conditions than under low status conditions.

2. R, W, and NCC scores will be greater for Ss with high scores on n-ach than for Ss with low scores on n-ach.

3. R, W, and NCC scores will be greatest under high status conditions with high n-ach Ss and smallest under low status conditions with low n-ach Ss.

PROCEDURE

Experimental Design

The experimental design is shown in Table I. Each of two Es tested equal numbers of Ss under each of the status sets, and their Ss were equally divided between high and low n-achievers.

TABLE I—Experimental Design

	High n-ach		Low n-ach	
	E1	E2	E1	E2
High status	7Ss	7Ss	7Ss	7Ss
Undefined status	7Ss	7Ss	7Ss	7Ss
Low status	7Ss	7Ss	7Ss	7Ss

Subjects

Ss were male undergraduates at the University of North Carolina, naive with respect to the Rorschach. They were selected from a pool of 430 Ss to whom the EPPS had been administered. The full range of n-ach scores (0-26) was represented in the group, with a mean of 15.1 and a S. D. of 4.0. Cutting scores (established at 10 and 20) included the upper 19% and lower 18% of the group, giving 157 persons from whom the 84 Ss were randomly drawn and assigned to the experimental groups.

Examiners

The examiners were a male and a female graduate student, the same age, with nearly identical training and experience in the use of the Rorschach.

---

[1] This work was completed as part of the requirements for the M. A. degree. Data collection was facilitated by support provided by a grant from the United States Public Health Service (Grant M-1027, E. Earl Baughman, principal investigator). The authors are indebted to Dr. Baughman, who directed the work, and to Drs. John J. Mellinger, Samuel L. Guskin, W. Grant Dahlstrom and Shephard Liverant.

Status Sets

The status sets were induced primarily through the use of short typewritten paragraphs describing the purpose of the study and the persons conducting it. These paragraphs were identical for the three status sets, except for the way in which E and the purpose of the study were defined. In the high status set E was defined as a research scientist, in the low status set as a student working on a term paper, and in the undefined status set Es were referred to as "individuals." The Es dressed in a manner appropriate to the status set: white lab coats for high status, casual street dress for undefined status, and, in the case of the female E, "bobby socks" for low status. Es also introduced themselves as Dr., Mr., or using their first name according to the set. Otherwise, standard procedures were maintained throughout, using bare offices.

Testing Procedure

The testing procedure included standard greeting and introduction of E, reading of the status setting paragraph by S while E left the room briefly, then the administration of the Rorschach. Beck's (1) suggested instructions were used, with S seated with his back to E. Encouragement was given if S rejected or gave only one response to Card I, never after that. Finally, Form A of the Thurstone Test of Mental Alertness (15) (hereafter referred to as TMA) was given to each S to check for possible differences in intellectual ability between the groups.

Scoring

The Es scored their protocols independently for productivity, location, and content. Scoring reliability was determined by having each E re-score twenty of the other E's records and computing reliability coefficients (Pearson product moment) for each category used. These r's ranged from +.97 to +.99.

RESULTS

There were no significant differences between the groups with respect to intelligence. The relationships between the dependent variables (R, W, NCC) and intelligence were also analyzed, but no significant correlations were found.

The means and S. D.'s for R, W, and NCC scores obtained under each experimental condition are shown in Table II. The results of the analysis of variance for R are presented in Table III.

The analysis of variance for R shows that the number of responses given by the Ss varied as a function of the status setting used, while n-ach and the Es did not significantly affect the variance. T-tests revealed differences between the mean R in High and Undefined and between High and Low settings significant at the .01 level, but no difference between Undefined and Low settings. Ss gave significantly more responses under High status conditions than they did under the other two sets.

Correlation coefficients revealed that little of the variance in W could be predicted from R, therefore no control for R was necessitated. A logarithmic transformation of W scores was made since the variance in one cell exceeded its mean. Analysis of variance then showed that none of the independent variables significantly influenced W.

The high correlation between R and NCC (average Pearson product moment $r = +.79$) made the use of analysis of co-variance necessary in order to show how NCC varied independently of R. Two of the F ratios were significant: the interaction between n-ach and Es ($p = .05$) and the interaction between status and the Es ($p = .05$). No one of the independent variables alone, however, had a statistically significant influence upon NCC.

DISCUSSION

The major finding of this research is that the way in which E is defined

TABLE II—Means and Standard Deviations for R, W, and NCC Obtained by Two Es from High and Low n-achievers under High, Undefined, and Low Status Settings

Rorschach Score	Status Setting		High n-ach			Low n-ach			High and Low n-ach Combined		
			E1 (N= 7)	E2 (N= 7)	Both Es (N= 14)	E1 (N= 7)	E2 (N= 7)	Both Es (N= 14)	E1 (N= 14)	E2 (N= 14)	Both Es (N= 28)
R	High	$\bar{X}$	39.9	29.0	34.4	37.3	43.1	40.2	38.6	36.1	37.3
		S.D.	18.4	14.4	16.7	13.0	21.0	17.1	15.3	18.8	16.9
	Undefined	$\bar{X}$	27.4	31.3	29.4	21.3	26.7	24.0	24.4	29.0	26.7
		S.D.	12.0	13.0	12.2	8.8	20.8	15.6	10.6	16.8	14.0
	Low	$\bar{X}$	24.9	25.0	24.9	36.7	23.1	29.9	30.8	24.1	27.4
		S.D.	6.0	17.0	12.3	20.5	11.7	17.5	15.8	14.1	15.1
	All sets	$\bar{X}$	30.7	28.4	29.6	31.8	31.0	31.4	31.2	29.7	30.5
		S.D.	14.1	14.4	14.0	16.1	19.6	17.7	14.0	17.0	15.9
W	High	$\bar{X}$	13.3	9.6	11.4	9.4	9.6	9.5	11.4	9.6	10.5
		S.D.	16.8	3.3	11.8	5.7	5.1	5.2	12.3	4.1	9.0
	Undefined	$\bar{X}$	8.7	10.6	9.7	9.0	8.1	8.6	8.9	9.4	9.1
		S.D.	1.9	7.7	5.5	4.6	4.3	4.3	3.4	6.2	4.9
	Low	$\bar{X}$	9.4	10.1	9.8	12.1	7.4	9.8	10.8	8.8	9.8
		S.D.	2.8	3.4	3.0	6.8	3.5	5.7	5.2	3.6	4.5
	All sets	$\bar{X}$	10.5	10.1	10.3	10.2	8.4	9.3	10.4	9.2	9.8
		S.D.	9.6	5.0	7.6	5.7	4.2	5.0	7.8	4.7	6.4
NCC	High	$\bar{X}$	11.3	8.7	10.0	12.7	9.1	10.9	12.0	8.9	10.5
		S.D.	3.2	4.0	3.7	4.5	4.2	4.6	3.8	3.9	4.1
	Undefined	$\bar{X}$	9.3	11.7	10.4	8.0	8.6	8.3	8.6	10.1	9.4
		S.D.	3.5	3.8	3.7	2.6	5.7	4.3	2.9	4.9	4.1
	Low	$\bar{X}$	8.1	7.9	8.0	11.9	7.6	9.7	10.0	7.7	8.9
		S.D.	1.7	3.2	2.5	3.9	2.8	3.9	3.4	2.9	3.3
	All sets	$\bar{X}$	9.5	9.4	9.5	10.9	8.4	9.6	10.2	8.9	9.6
		S.D.	3.0	3.9	5.0	4.1	4.2	4.3	3.6	4.1	3.9

TABLE III—Analysis of Variance for R

Source	df	Variance Estimate	F	p
Status	2	987.94	4.15	$.01<p<.05$
n-ach	1	68.76	<1	
Examiners	1	48.76	<1	
Interaction status x n-ach	2	541.45	2.27	$.10<p<.20$
Interaction status x Es	2	230.73	<1	
Interaction n-ach x Es	1	12.19	<1	
Interaction status x n-ach x Es	2	405.08	1.70	$.10<p<.20$
Error	72	238.14		
All sources	83	21,064.95		

to S may affect the number of responses that S gives to the Rorschach blots. Thus the significance of the interpersonal context within which the testing takes place is underscored. A possible source of variation in results from one research report to another is also suggested. Since R is significantly related to most other Rorschach variables (5, 6), the implications of this finding are even more far reaching. There is in addition the suggestion that certain interactional effects involving the examiner may influence the range of content that S produces.

Interpersonal theory suggests that an individual's performance is not unrelated to the human situation within which it occurs. Also it seems likely that most Ss will want to do their best when working for or with a person of some significance. The nature of the Rorschach affords S no certain means of evaluating his performance, but the amount or quantity of response is oftentimes, in our culture, one means of estimating how well one has done. The Ss in this research reacted to a person with high status by increasing the number of responses emitted.

There were no differences in productivity, however, between the undefined and low status sets. Numerous remarks by Ss in the undefined context suggested that they perceived E to be another student collecting thesis data, hence the similarity of results under the two conditions may reflect only their subjective identity to most Ss. It appears to make no difference whether E is specifically defined as a student or whether the situation is handled in such a way as to make this the natural interpretation, without the words being spoken.

The finding that Ss who differ in n-ach do not differ in R was unexpected. Before this finding can be interpreted more information concerning the validity of the EPPS scale as a measure of n-ach will have to be gathered. To some extent, the results of this research question the construct validity of this scale.

The failure of W and NCC to reflect changes in E's status might best be attributed to the variables themselves. Others have found W to be a relatively stable score despite attempted experimental manipulations (8). As for NCC, a mere counting of content categories may have obscured qualitative changes in content which did perhaps occur.

CONCLUSION

The Rorschach was administered to 84 Ss (high and low n-achievers) by two Es under three status sets. The Ss gave significantly more responses when E was defined as having high status than when his status was undefined or when he was defined as having status equal to that of S. Status did not affect the number of content categories used, however, nor the number of W responses. No significant effects due to n-ach or Es were found.

REFERENCES

1. Beck, S. J., *Rorschach's test I. Basic processes.* New York: Grune and Stratton, 1950.

2. Calden, G. and Cohen, L. B. The relationship of ego-involvement and test definition to Rorschach test performance. *J. proj. Tech.*, 1956, *17*, 300-311.

3. Cox, F. N. and Sarason, S. B. Test anxiety and Rorschach performance. *J. abnorm. soc. Psychol.*, 1954, *49*, 371-377.

4. Edwards, A. L., The Edwards Personal Preference Schedule. New York: The Psychological Corporation, 1953.

5. Eichler, R. M. Some comments on the controlling of differences in responses on the Rorschach test. *Psychol. Bull.*, 1951, *48*, 257-259.

6. Fiske, D. W. and Baughman, E. E. The relationship between Rorschach scoring categories and total number of responses. *J. abnorm. soc. Psychol.*, 1953, *48*, 25-32.

7. Henry, E. M. and Rotter, J. B. Situational influences on Rorschach responses. *J. consult. Psychol.*, 1956, *20*, 457-462.

8. Hutt, L. M. *et al.* The effect of varied experimental sets upon Rorschach test performance. *Rorschach Res. Exch.*, 1950, *14*, 181-187.

9. Leventhal, H. Effects of perceptual training on the Rorschach. *J. consult. Psychol.*, 1956, *20*, 93-98.

10. Lord, E. Experimentally induced variations in Rorschach performance. *Psychol. Monogr.*, 1950, 64 (Whole No. 316).

11. Phares, E. J. and Rotter, J. B. An effect of the situation on psychological testing. *J. consult. Psychol.*, 1956, *20*, 291-293.

12. Sanders, R. and Cleveland, S. The relationship between certain examiner personality variables and subject's Rorschach scores. *J. proj. Tech.*, 1953, *17*, 34-50.

13. Sarason, S. B., *The clinical interaction.* New York: Harper and Brothers, 1954.

14. Schachtel, E. G. Subjective definitions of the Rorschach test situation and their effect on test performance. *Psychiatry*, 1945, *8*, 419-448.

15. Thurstone, L. L. and Thurstone, T. G., Thurstone Test of Mental Alertness. Chicago: Science Research Associates, Inc., 1952.

Received October 1, 1958.

The Perceptual Organization TAT Score: Number, Order, and Frequency of Components

RICHARD H. DANA
University of Nevada

Concurrent validation studies of the TAT have proposed three simple, objective scores which employ stimulus-properties of the cards (3, 5, 6, 7). These scoring categories, (a) Perceptual Organization (PO), (b) Perceptual Range (PR), (c) Perceptual Personalization (PP), were developed from a rationale for objective scoring (2) and a statement of personality theory (1). Two scoring categories, PO and PR, had approximately equivalent predictive efficiency. As a consequence further research will focus on separate categories.

PO DEVELOPMENT AND VALIDATION

PO reflects one basic aspect of test behavior, the approach to the situation. PO measures the *S*'s ability to follow the directions to "tell a story". There are seven components which epitomize the usual directions: (a) card description, (b) present behavior, (c) past events, (d) future events, (e) feeling, (f) thought, (g) outcome.

The 390 *S*s used in the development of PO and for the present studies were equally drawn from rigorously defined normal, neurotic, and psychotic populations, 240 males and 150 females.

Two kinds of scorer reliability were determined. Scoring category reliability with randomly drawn male and female samples, from original and cross-validation groups, was 93 and 94 per cent of agreement. The reliability of scoring PO components ranged from 89 to 97 per cent. There were no differences in scoring by psychologists or clerks.

Concurrent validation studies yielded prediction scores which successfully differentiated between 68 and 83 per cent of *S*s in each group from other groups. Sex differences are minimal. Length of TAT story and intelligence of *S* are not significant variables. PO thus has considerable value, at least for prediction of traditional clinical labels. In a sense PO scores provide an index of degrees of psychiatric illness. Details are contained in a manual summarizing development and validation research (8).

PROBLEM

Previous research has been propadeutic to validation of PO with predictions of personality characteristics as external criteria. These predictions have primary importance in the attempt to increase the probability of "correct" clinical statements from TAT data. Pilot research using the order and frequency of PO components suggested relationships to personality variables and to psychopathology. Prior to any examination of specific hypotheses, it was necessary to evaluate the stimulus-value of the TAT cards with respect to number, order, and frequency of PO components elicited. The salient question with respect to PO is: How similar are the stimulus-values of the TAT cards for number, order, and frequency of PO components for normal and clinical *S*s?

METHOD AND RESULTS

PO stimulus-value of TAT cards: The numbers of PO components elicited by each card are roughly equivalent. Evidence for this accrues from product-moment correlations between PO scores for each card with PO scores for all cards. A mean correlation (z transformation) of .70 was obtained with a range from .60 (card 16) to .78 (card 14). Since a short-form TAT set is used throughout (4), only those pertinent correlations will be reported: Card 2=.68; card 3GF=.76; card 4=.69; card 6GF=.64; card 7GF=.74 (N=67 normal, female college *Ss*). Table I shows the PO intercorrelations for these five TAT cards.

TABLE I—PO Product-Moment Inter-Correlations for 67 Normal Female *Ss* on Five Cards

Card	3	4	6	7
2	.62	.40	.50	.53
3		.61	.57	.58
4			.58	.57
6				.60

Note: all correlations are significant at $<.001$ level.

There was a .91 correlation between the mean PO score for the five cards and the mean PO score derived from all cards. Thus, each card elicits PO scores which are close approximations of (a) the mean PO score for all twenty cards, (b) scores of the other four cards in the short-form set (for females).

Order of PO components: The order of PO components does not differ either from card to card or from group to group. Table II presents intercorrelations for mean order with normal female *Ss*. Nine of ten *rho* correlations are significant at the $<.01$ level. Table III presents similar comparisons between mean orders of occurrence for PO components of normal and clinical groups.

TABLE II—Rank-difference Inter-Correlations of the Mean Order of PO Components for 67 Normal Female *Ss*.

Card	3	4	6	7
2	.89	.79*	.89	.96
3		.96	1.00	.96
4			.96	.89
6				.96

Note: all correlations are significant at $<.01$ level except * which is significant at the $<.05$ level.

TABLE III—Rank-difference Correlations Between Mean Orders of Occurrence of PO Components for Normal, Neurotic, and Psychotic Groups

Group	Neurotic	Psychotic
Normal	.89	.86
Neurotic		.96

Note: all correlations are significant at $<.01$ level.

There is a significant relationship between order of occurrence for all three groups. The order of PO components, irrespective of diagnostic group, proceeds from card description to either present behavior or past events, then to feeling, thought, future events and outcome.

Frequency of PO components: Table IV presents *rho* correlations between frequencies of each PO component for the three groups.

TABLE IV—Rank-difference Correlations Between Frequencies of Each PO Component For Three Groups

Group	Neurotic	Psychotic
Normal	.54	.50
Neurotic		.90*

* significant at $<.01$ level.

The frequencies of occurrence for PO components are not significantly related for normal and clinical groups. The neurotic and psychotic groups, however, have highly similar frequencies.

TABLE V—Rank-difference Inter-Correlations Between Cards for Frequency of PO Components in Each Group

Group	Card 3	4	6	7
Normal				
2	.00	.42	.53	.58
3		.60	.21	.58
4			.88**	.85**
6				.78*
Neurotic				
2	.29	.87**	.84*	.98**
3		.49	.60	.38
4			.96**	.81*
6				.89**
Psychotic				
2	.44	.71*	.86**	.93**
3		.76*	.53	.38
4			.85**	.76*
6				.96**

* significant at $<.05$ level.
** significant at $<.01$ level.

Rank-difference correlations were computed between cards and between groups for frequency (Tables V, VI). Inspection of Table V indicates that frequencies for some cards are significantly related; frequencies for some cards are not significantly related. With ten intercorrelations for each group, three for normals, six for neurotics, and seven for psychotics are significant. Thus, the PO stimulus-value, with respect to frequency, is much more similar for clinical groups than for a normal group. In other words, *psychopathology effectively reduces the objective differences between TAT cards.* When intercorrelations between groups for frequency on each card are inspected, the simple inference of differences between normal and clinical groups is complicated (Table VI). It appears that some cards for some groups have similar frequencies. Although differences between groups do obtain when frequencies of scores for all five cards are used, accurate diagnosis cannot be made on this basis. It is congruent with these results to assume that *personality dimensions may be distinct from diagnostic categories and that discrepancies in results may be attributable to this.* A general hypothesis accruing from this analysis is that frequency of occurrence of PO components is related to personality data.

TABLE VI—Rank-difference Intercorrelations Between Groups for Frequency of PO Components on Each Card

	Group	
	Neurotic	Psychotic
Card 2		
Normal	.76*	.58
Neurotic		.81*
Card 3GF		
Normal	.16	.38
Neurotic		.87**
Card 4		
Normal	.83*	.71
Neurotic		.96**
Card 6GF		
Normal	.92**	.79*
Neurotic		.85**
Card 7GF		
Normal	.42	.35
Neurotic		.96**

* significant at $<.05$ level.
** significant at $<.01$ level.

SUMMARY AND CONCLUSIONS

1. All TAT cards are approximately equivalent stimuli. It makes no difference which cards are used.

2. The number of TAT cards used is important with five cards providing data equivalent to that from the entire set.

3. The order of PO components is not related to the specific TAT card or to diagnostic group. A standard order is preserved for all groups on all cards.

4. Frequency of occurrence of PO components is not related to card stimulus-value *per se* but to diagnosis and hypothetically to personality variables.

These results suggest the need for (a) large scale correlational attempts to isolate personality variables related to specific PO components, (b) testing of well defined groups which are high and low on previously isolated personality variables to determine the strength of relationships to PO components, (c) the development of specific hypotheses from the above results which predict the direction and magnitude of relationships between PO components and independent external criteria. This would constitute cross-validation. Research is in process on the first two aspects of this proposed framework for PO validation.

REFERENCES

1. Dana, R. H. Personality Orientation: an organizational focus for current research. *J. Psychol.*, 1954, *37*, 139-150.

2. Dana, R. H. The objectification of projective techniques. *Psychol. Rep.*, 1955, *1*, 93-102.

3. Dana, R. H. Clinical diagnosis and objective TAT scoring. *J. abnorm. soc. Psychol.*, 1955, *50*, 19-25.

4. Dana, R. H. Selection of abbreviated TAT sets. *J. clin. Psychol.*, 1956, *12*, 36-40.

5. Dana, R. H. Cross validation of objective TAT scoring. *J. consult. Psychol.*, 1956, *20*, 33-37.

6. Dana, R. H. An application of objective

TAT scoring. *J. proj. Tech.*, 1956, *20*, 159-163.

7. Dana, R. H. Norms for three aspects of TAT behavior. *J. gen. Psychol.*, 1957, *57*, 83-89.

8. Dana, R. H. Proposal for objective scoring of the T.A.T. *Percept. Mot. Skills.*, 1959, *9*, 24-34 Monogr. Suppl. 1.

Received October 21, 1958

The Relationship Between Rorschach Responses and Attitudes Toward Parents

CYNTHIA ENGEL

There has been a trend in Rorschach interpretation recently toward more emphasis on content analysis, generally based on psychoanalytic theory. One of the early references to content analysis appears in Bochner and Halpern (2). In discussing cards IV and VII these authors write: "Card IV — the heavy male figure may suggest the father or authority in general. This may be pleasant or unpleasant. It's dark quality and overwhelming characteristics are particularly disturbing to those for whom parental authority is still an unresolved problem. Card VII — the two female faces and even female figures (in reverse position dancing girls), as well as the generally soft light quality, frequently with maternal implications." Their hypotheses concerning cards four and seven are based on clinical experience and they present no further evidence in support of their hypotheses. Since the original introduction of the idea that cards IV and VII represent the father and mother figures respectively, many clinicians interpret responses to these cards as attitudes felt toward the parent figures.

The first systematic investigation to determine the extent to which the properties of cards IV and VII actually do elicit responses relative to "father" and "mother" was done by Meer and Singer (8). The hypothesis they tested was that normal adults will designate card IV as the "father card" and card VII as the "mother card" more frequently than would be attributed to chance. The subjects they used were 50 male college students. While their results were statistically significant, in actual numbers only 12 of the 50 subjects tested chose card IV as the "father card," and only ten chose card VII as the "mother card."

Rosen (11) repeated the procedures of Meer and Singer, using as subjects 180 university psychology students, and obtained comparable results.

Charen's study (3) is the most recent in this area. He administered the Rorschach, and at the conclusion asked his subjects to "pick out the card which is most like your father," and "pick out the card that is most like your mother," and they were asked the reasons for their choices. With but few exceptions the questions were interpreted by the patients as meaning "which *response* that you gave to the Rorschach reminds you of your parent." Charen tested over 50 adults in this manner. Both sexes were tested; all were white and from various socio-economic classes except relief groups. His conclusion is that there is a tendency to "use all cards in such a manner that no distinction between cards IV and VII and the other eight cards could be made."

Thus, according to Charen, if card VII is always presumed to represent the mother figure and card IV the father figure for all subjects, gross errors would result in a percentage of cases.

PROBLEM

Since the previously cited studies have been done with adults, it was felt that it would be of interest if a similar study were done with children. In addition to determining the cards chosen by children as "mother cards" and "father cards", certain other problems were also undertaken. The questions investigated in the present study were:

First, do children choose card IV as the "father card" and card VII as the "mother card" more frequently than they choose any other cards.

Second, since not all children choose cards IV and VII, is their attitude toward card VII the same as toward the card chosen as the "mother card", and is their attitude, whether positive or negative, toward card IV the same as their attitude toward the card chosen as the "father card." If the attitudes toward the cards chosen as the "mother" and "father" cards and toward cards IV and VII are respectively the same, then if a card other than IV and VII are chosen there might still be some justification for interpreting responses to cards IV and VII as relevant to attitudes to mother and father.

SUBJECTS

The 30 subjects used in this study were volunteers recruited from the author's classes and classes of her colleagues.[1] All subjects were boys between the ages of 11 and 12. They varied in school grade from five to seven. The children were all from middle and upper middle class homes and of the Jewish religion.

PROCEDURE

Each subject was administered the Rorschach according to the method as outlined by Klopfer (6). At the completion of the standard Rorschach test the subject was asked to choose two cards: "One that in your imagination makes you think of your father, and one that in your imagination makes you think of your mother."[2]

After choosing the two cards the child was asked to explain why he chose them. All the subjects were able to choose two cards and explain the reasons for their choice.

All the Rorschach responses were scored as indicating positive or negative attitudes. If it was not clear during the administration whether a response was positive or negative, then during the "Testing of the limits" the subject was questioned and encouraged to talk a little more about the animal or leaf or whatever else was the subject of his response. As a result each response became scorable as either positive or negative.

RESULTS

In Table I we have presented the frequency with which each card was chosen as a "father card" and "mother card" by the 30 children who participated. It is apparent that there is a great deal of variety in the children's choices. Although there is no strong trend toward choosing cards IV and VII respectively as the "father" and "mother" cards, card III was chosen a great deal. The two most frequent choices for a "mother card" were cards III and VII. The two most frequent choices for a "father card" were cards III and IV. Since card III is the most potent human figure in the set of cards, is there a different set of identification, diffuse and undifferentiated, in the pre-adolescent as contrasted with the adult?

A comparison was made between the attitudes expressed toward card IV and those cards chosen as the "father card" and the attitudes expressed toward card VII and those cards chosen as the "mother card." It was felt that if those attitudes are similar, then there would be justification for this type of interpretation as "mother card" and "father card." A comparison was also made between the cards chosen as mother and father cards and card X as a control card. The agreement between card VII

TABLE I—Choice of Mother and Father Cards

Card No.	Number of times chosen as mother card	Number of times chosen as father card
1	2	2
2	2	0
3	8	6
4	1	6
5	0	2
6	4	3
7	6	2
8	2	1
9	4	4
10	1	4

---

[1] The author wishes to thank the officials of the East-Rockaway Jewish Center for permission to conduct the study, and her colleagues for their help in recruiting the boys who participated.

[2] Based on a pretest which had been undertaken previously, this was found to be the most easily understood form of posing the question to the boys.

and the chosen mother card is 56.6%, and the agreement between card X and the chosen "mother card" is 40%; the difference between these two proportions is not significant at the 5% level. Agreement between card IV and the chosen "father card" is 50%, and the agreement between card X as the control and the chosen "father card" is 50%. Thus there is no greater agreement between the attitudes expressed toward card VII and those expressed toward the chosen "mother card" than those expressed toward card X and the chosen "mother card."

Neither is there any greater agreement between the attitudes expressed toward card IV and the chosen "father card" than there is between card X and the chosen "father card." Since the cards children choose as mother and father cards vary greatly, and there is no greater agreement between the attitudes expressed toward card IV and VII and the attitudes expressed toward the chosen "father" and "mother" cards respectively, and the attitudes expressed toward card X as the control card, there seems to be no justification for using cards IV and VII as the "father card" and "mother card" for purposes of interpretation.

To test whether the different Rorschach cards actually do elicit different attitudes depending on stimulus material, a correlation was computed between the percent of responses to cards 1, 3, 5, 7, and 9 which were positive and the percent of positive responses to cards 2, 4, 6, 8, and 10. The correlation is .20, not significant at the 5% level. This indicates that the Rorschach cards do elicit different attitudes, but these differences in attitudes do not in any way lend support to the theory that certain cards elicit responses that in some way are related to the mother and father figures.

Thus the two questions posed at the outset of this study have been answered. These findings fail completely to support the theory that in terms of content analysis, card IV is the "father card" and card VII is the "mother card." The results of this study together with the findings of Charen clearly indicate that to interpret blindly reactions to card IV as reactions to the father figure and reactions to card VII as reactions to the mother figure may lead to gross errors of interpretation.

However one interesting point was raised as a result of the children's choices of mother and father cards. The boys picked card III frequently for both the mother and father card. This suggests that the identification may be different for these pre-adolescents than it is for adults. To follow this through, the author is now testing girls between the ages of nine and eleven to see whether they also exhibit this diffuse undifferentiated process of identification by choosing card III frequently as the father and mother card.

SUMMARY

The study was undertaken to see whether children choose cards IV and VII as the "father" and "mother" cards, and since not all children will choose these cards, are their attitudes towards the cards chosen as "father" and "mother" cards similar to their attitudes towards cards IV and VII.

The results obtained clearly indicate that when children choose a "mother" and "father" card there is little difference between cards IV and VII and the remaining eight cards in regard to frequency of choice. This study provides no support for the theory that cards IV and VII usually represent the father and mother figures respectively. Interpretations based on this theory will be in error a sizeable proportion of the time. It was found, however, that card III was chosen frequently for both the "mother" and "father" card. The author is now doing a follow up to see whether girls between the ages of nine and eleven will exhibit this reaction too.

REFERENCES

1. Beck, S. J. *Rorschach's test*, Vol. 1 & 2. New York: Grune and Stratton, 1944-45.

2. Bochner, Ruth and Halpern, Florence. *The clinical application of the Rorschach test.*

New York: Grune and Stratton, 1942.

3. Charen, Sol. Pitfalls in interpretation of parental symbolism in Rorschach cards IV and VII. *J. consult. Psychol.*, 1957, *21*, 52-56.

4. Edwards, A. *Experimental design in psychological research*. New York: Rinehart, 1954.

5. Freud, S. *The interpretation of dreams*. New York: Modern Libr., 1950.

6. Klopfer, B., Ainsworth, Mary, Klopfer, W., and Holt, R. *Developments in the Rorschach technique*, Vol. 1. New York: World Book, 1954.

7. Lindner, R. M. Content analysis in Rorschach work, *Rorsch. Res. Exch.*, 1946, *10*, 121-129.

8. Meer, B. and Singer, J. L. A note on the "father" and "mother" cards in the Rorschach inkblots, *J. consult. Psychol.*, 1950, *14*, 482-484.

9. Peatman, J. *Descriptive and sampling statistics*. New York: Harper, 1947.

10. Rorschach, H. *Psychodiagnostics*. Berne: Huber, 1951.

11. Rosen, E. Symbolic meanings in the Rorschach cards: a statistical study. *J. clin. Psychol.*, 1951, *7*, 239-244.

12. Schafer, R. *Psychoanalytic interpretations in Rorschach testing*. New York: Grune & Stratton, 1954.

Received December 29, 1958

Types of Pre-Cognitive Defensive Organization in a Tachistoscopic Experiment

ULF KRAGH
Stockholm, Sweden

INTRODUCTION

The starting-point for the experiments reported here has been the theory of defense mechanisms formulated by Sigmund and Anna Freud and others, and the actual-genetic model of perception-personality (6, 7, 8, 13, 15). S. Freud (4) has given a scheme for the dynamics underlying defense mechanisms. Very roughly this scheme comprises three links: threat/danger, anxiety, and defense against anxiety. We have transformed this scheme into experimental procedure, equally encompassing three links: *subliminal perceptual threat, (subliminal) anxiety, and defensive response.*

The actual-genetic model of perception-personality has been conceived in close interaction with an experimental technique for the study of pre-cognitive organization and of the development of percepts (6, 7, 8 and 12, 13, 14, 15; cf. also 2 and 16). We are not entering in detail upon the theoretical foundations or the various technical aspects; they have been laid down elsewhere. Though the experiments on "defensive pre-cognitive organization" presented here have been worked out within the frame of the actual-genetic (*act*) theory of perception and personality, interpretations of the findings do not necessarily presuppose the acceptance of the model as a whole.

During the last decade the concept of "perceptual defense" has been the object of continuous discussion. Even if there is affinity of approach with respect to techniques there are, however, great differences between the analysis of pre-cognitive *organization* given here, and the analysis of "perceptual defense" mainly aiming at establishing the frequency of raised *thresholds* for correct recognition.

METHOD AND DEFINITIONS

The technique consists in the successive exposure of a TAT-like picture by the tachistoscope, exposure time being progressively increased.

The tachistoscope is made of a projector with a 100 Watt bulb and a camera shutter. A piece of paper is placed around the projector tube so as to screen off the experimenter's manipulations from the Ss. The pictures are projected onto a transparent screen 25"x14". The screen is placed between the projector and the Ss at the distance where the projected (and focused) picture just covers the screen. No fixation point is utilized. The illumination of the room is regulated so that the picture is barely recognized clearly and distinctly at unlimited exposure time. Under the standard conditions and with the standard diapositives employed this equals scale values .4-2.0 on a Weston Master Universal Exposure Meter placed at the distance of 5 m. in front of the screen, and directed towards the projector.

There are 12 exposures of each picture, in msecs: 20, 40, 40, 100, 100, 200, 200, 200, 500, 500, 500, 500.

The stimulus employed here is the TAT picture number 1 (boy with a violin), the head and shoulders of a threatening and ugly male person having been inserted at the right above the boy. The experiments are conducted with groups of not more than about 40 Ss. The first row of Ss is placed at the distance of about 6 m. from the screen. (Mentally abnormal Ss are tested individually.)

The Ss are instructed to make a drawing of what they have seen on the screen without paying attention to whether their impression is correct or not. For each exposure they have to make a drawing in a square. If they feel unable to make any kind of drawing, they are also allowed to make markings instead of a drawing. In addition to the drawings (markings) a written comment is also required so as to make quite clear what each S has seen, and at what place on the screen. The Ss are told to work as fast as they can without neglecting the thoroughness of description. The time interval between the exposures is determined by the time required by the slowest S for reporting. It has rarely been more than about 3 minutes.

In all 260 aviation cadets took part in the experiments; their age varies between 18 and 21 years. They were all subjected to a preliminary screening procedure, medical and psychological. None has an I.Q. much below the average, and visual acuity is normal. Their educational level varies between elementary school and college (Swedish Gymnasium).

Definitions. *Actualgenesis* denotes method as well as ("pre-cognitive") data in their serial arrangement. The concept *phase* is defined as the sum total of data registered in connection with one exposure. In the experiments referred to here, the first phase corresponds to the exposure at which S has first seen something to which he attributes a meaning, and the last phase that exposure at which he has seen the picture "correctly". P-phases we term all those phases which precede the last phase.

DEFENSIVE ORGANIZATION AND DEFENSE MECHANISMS

The analysis of certain well definable types of pre-cognitive organization will be related to the frame of psychoanalytic defense mechanisms for the following reasons:

1. Specific types of pre-cognitive organization have been found to characterize compulsion neurotic patients and have been associated with the defense mechanism of isolation (6 pp. 47, 191-204 and 288; 14).

2. In a small group of patients suffering from anxiety hysteria, the following phenomena were observed. Exposing the TAT picture nr 6GF by the tachistoscope in the manner described above, an anxiety-laden black spot gradually emerged at the place of the *man* in the picture. But at the very exposure where the man's head was on the verge of becoming recognized by the (female) patients, they perceived instead an ugly, threatening *devil's mask*. For three reasons this particular pre-cognitive structure was tentatively identified by referring to the defense mechanism of *repression*. Since S. Freud (4, pp. 63-65 and 155-158), repression is considered to be the main mechanism operating in hysteria. The threat presented by the picture was a "sexual" one, and the transformation of the visual field occurred at that perceptual level where the heterosexual relation was barely becoming recognized by the Ss (cf. 1, pp. 148-150). Finally the structural characteristics of "rigidity" (possibly connected with hysterical paralysis) also made it plausible to refer to the mechanism of repression (9).

3. Granted that no sharp borderlines separate the "normal" personality from the "abnormal" one as regards the working of defense mechanism (the occurrence of "defensive" pre-cognitive organization), analogous mechanisms (types of pre-cognitive organization) should be found in normal Ss with "abnormally strong" stimuli as in abnormal Ss with "weak" or "moderately strong" stimuli. If a threat is very strong, it seems reasonable to assume that even ordinarily rather well-adapted Ss are likely to take refuge in defensive measures (cf. 10 p. 582). Starting with the experiences with compulsion neurotic and hysteric patients mentioned, the normal secondary person in the (TAT) picture was thus replaced by an abnormally threatening one in order to evoke analogous abnormal (defensive) responses in normal Ss.

Personality descriptions and observations of behavior of aviation cadets who failed in primary training were made by officers of the training staff. These descriptions, too, lend support to an identification of defensive organization with defense mechanisms. They have not, however, been formalized for a rating procedure.

4. We have already pointed at the close correspondence between Freud's scheme and the scheme of our experiments. In many cases we find manifest anxiety reported by the S at one or more exposures, the anxiety referring to a black or dark part of the visual field; at the next exposure this organization is replaced by another less stimulus-conformable one, the anxiety (dis-

pleasure) disappearing more or less completely.

Utilizing Freud's terminology we say that in our experiments, secondary anxiety is induced, "in which something occurs in the id which activates a danger-situation for the ego and induces the latter to give the anxiety signal for inhibitions to take place" (4 p. 113). Following Freud we assume that the reaction to an internal danger-situation (which is created in our experiments by the short exposures of threatening pictures) is analogous to the reaction to an external danger-situation.

In the experiments neither the threat nor the anxiety must necessarily become conscious in order to provoke a defensive reaction. This is effected by using the projection of the ego instead of inflicting pain or displeasure directly on the Ss' ego (as in many experiments on perceptual defense). On the other hand there are Ss in whom the anxiety is manifest but defensive reactions are minimal, resulting in reality-testing.

5. There are obvious structural correspondences between types of pre-cognitive organization in our experiments on one hand and types of pre-conscious organization, i.e. defense mechanisms, on the other (1, 3, 4). When, for example, the existence of a threat is explicitly denied by the S at one exposure, we may refer to the defense mechanism of denial. If the threat is seen to be directed from the hero toward the secondary person, we may refer to identification with the aggressor.

6. The technique of free association, which has been the paramount tool of psychoanalysis, involves the reconstruction of pre-conscious material, neatly corresponding with the reconstruction of pre-cognitive levels (or of P-phases) in the act experiment. The concept of defense mechanism was mainly derived from data obtained by means of the method of free association.

We cannot, therefore, agree with G. Klein (5, pp. 349-350) who maintains that it is "pointless to expect direct analogues of 'repression' in percep-

NOTE. Markings made by the Ss: pe=person, m=man, k=woman, g=boy, f=girl, +=sympathetic, −=unsympathetic. Numbers represent age.

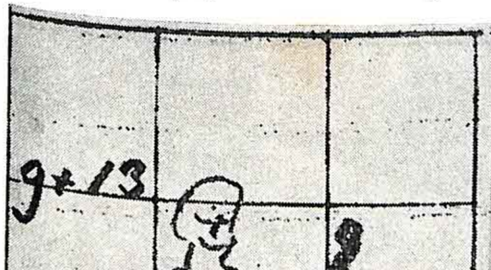


FIG. 1 — Repression (4) and isolation (2)

"A sleeping boy with a violin on his knees. A flower pot on the table."
(S nr 1, exposure 9)

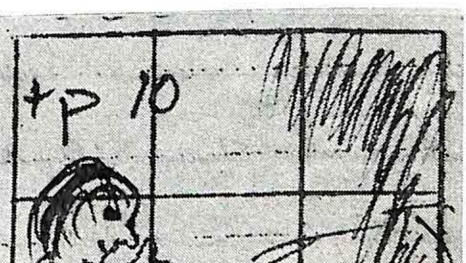


FIG. 2—Repression (2) and reaction-formation

"A boy playing with a puppy."
(S nr 2, exposure 3)

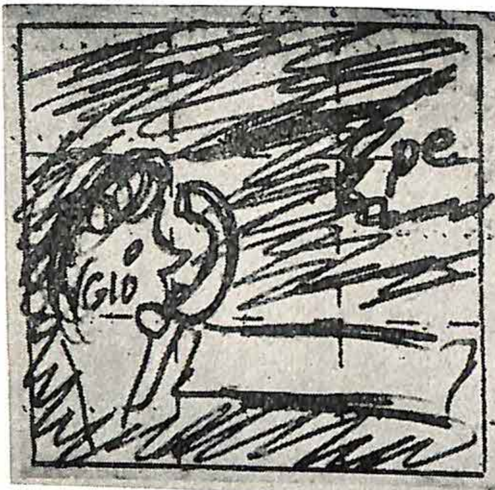


FIG. 3—Isolation (1 and 4)
"An odd old fellow to the right."
(S nr 5, exposure 8)

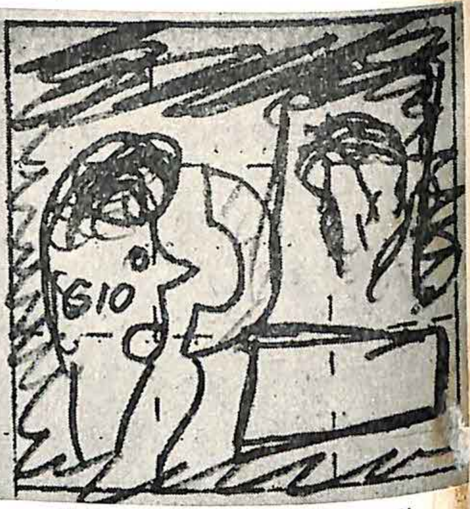


FIG. 4—Isolation (double 1)
"To the right the boy was seen in a mirror."
(S nr 5, exposure 9)

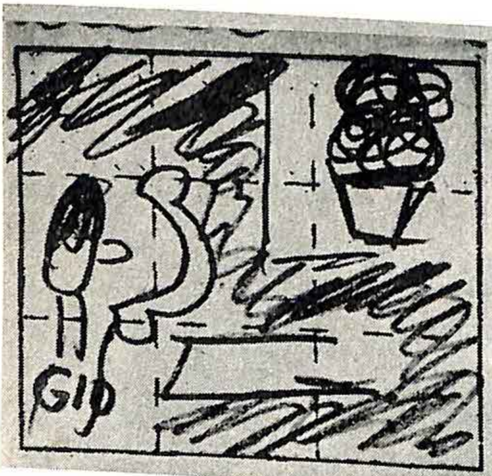


FIG. 5—Isolation (double 1) and repression (4)
"A flower in a window."
(S nr 5, exposure 10)

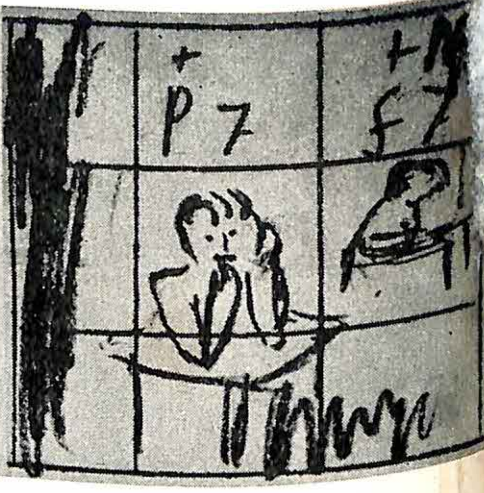


FIG. 6—Reaction-formation
"A girl is sitting in the other bank, writing."
(S nr 6, exposure 12)

tion" due to "the differences of method which both concepts reflect: perceptual methods are radically unlike those which gave rise to the classical defense mechanisms".

7. In neuroses one of the main characteristics of the defense mechanisms is considered to be that of distorting and counteracting reality-testing. Correspondingly we assume that in the development of percepts in the direction of reality (or stimulus), it is a sign of the activity of defense mechanisms when the threat (on the TAT-like picture) is not adequately dealt with in terms of reality, in particular at long exposure times (in late phases, on late perceptual levels), and when a preceding relatively correct organization is replaced by a less correct one.

CLASSIFICATION OF PRE-COGNITIVE DEFENSIVE ORGANIZATION

The following classification of pre-

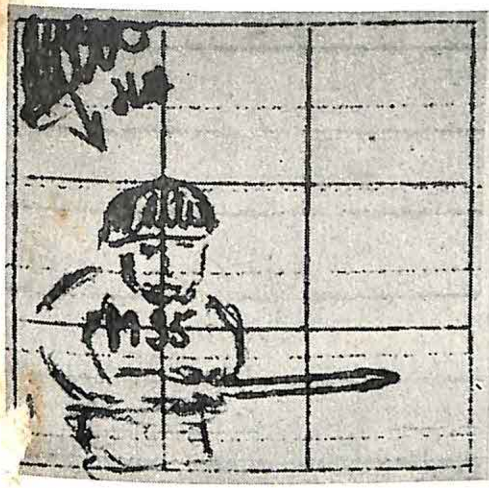


FIG. 7—Identification with the aggressor
"A soldier during fight. Critical situation,"
(S nr 7, exposure 4)

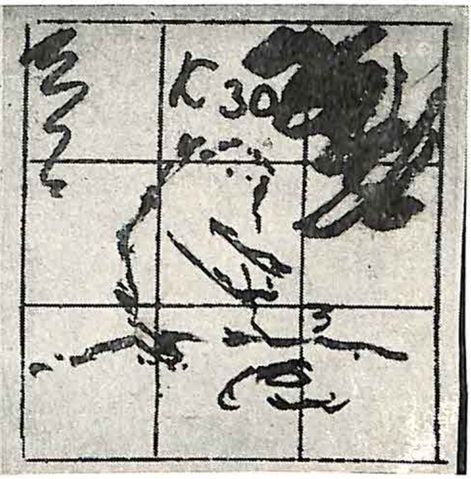


FIG. 8—Repression (5)
"A woman sitting at table, being served."
(S nr 8, exposure 8)

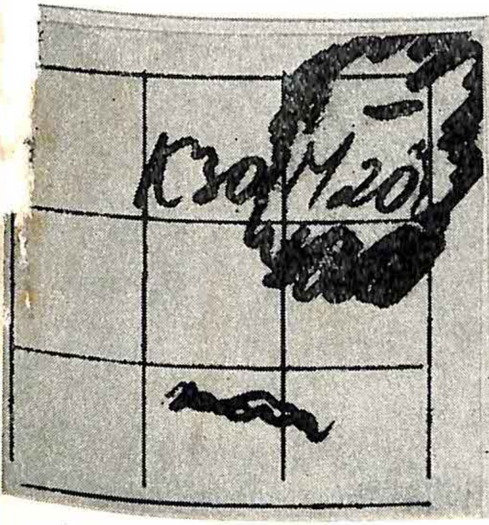


FIG. 9—No defensive type of organization
"An unsympathetic man appeared. Threatens the woman with a pistol."
(S nr 8, exposure 12)

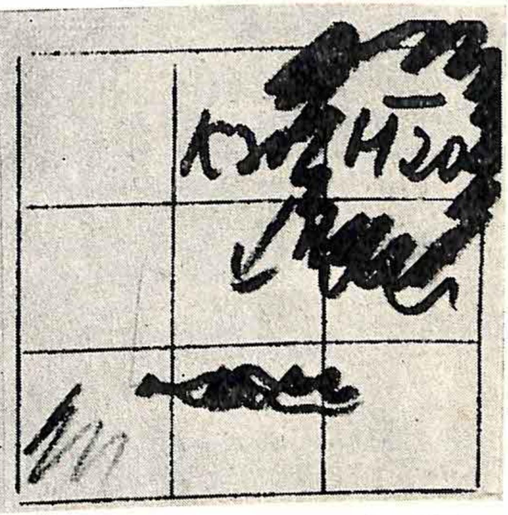


FIG. 10—Turning against the self (1)
"Maybe patient on the operating-table during stomach operation. A male assistant, and a female doctor?"
(S nr 8, exposure 13)

cognitive defensive organization has been undertaken on the basis of drawings and reports of 260 aviation cadets (mainly those who failed in primary training).

Hero denotes the person who is seen by the S at the place of the main person in the picture. *Secondary* denotes the person who is seen at the place of the secondary person in the picture. At the beginning of many series only one person is seen; in such cases we also term this person hero on the condition that he is not situated at the place of the secondary person in the picture.

The figures illustrate some types of

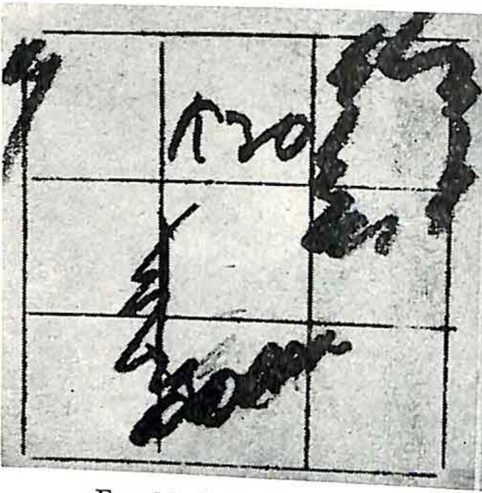


FIG. 11—Isolation (5)
"A woman at her lace-making table."
(S nr 8, exposure 15)

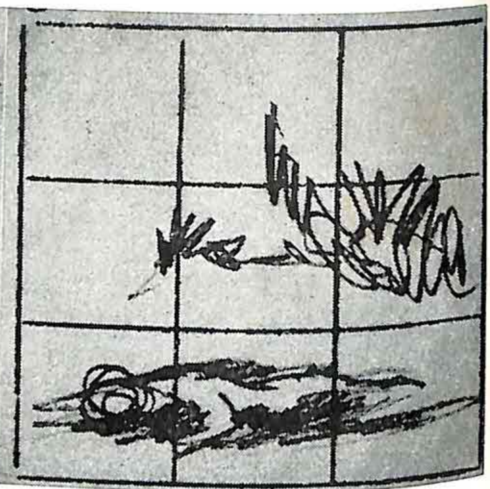


FIG. 12—Isolation (5) and Turning against the self (1)
"Somebody lying on the floor in the foreground." (S nr 9, exposure 13)

defensive organization. They are drawings made by seven of the Ss. It should be underlined that all drawings refer to one single picture motif.

Repression

The hero or the secondary are living but not human beings, or lifeless objects.

(1) The hero, or the secondary, or both are rigid, inanimate beings. Examples: sculpture, bust, statue.
(2) The hero or the secondary is an animal. (Fig. 2)
(3) The secondary is a "mask", or "disguised".
Mixed type (repression and isolation, 1): "a man disguised as a ghost".
(4) The hero or the secondary is an object. (Fig. 5)
Mixed type (repression and isolation, 2): lamp, window.
(5) The hero or the secondary is only a part of the body (except for the face). (Fig. 8)

Isolation

The hero and the secondary are separated or isolated from each other. The main person, or the secondary person, or the threat are not seen. The pre-cognitive levels are excluded (isolated) and there is only one single quasi-objective level of cognition.

(1) The hero and the secondary are isolated from each other in the visual field. (Figs. 3, 4 and 5) Examples: (a) The hero is separated from the secondary by a line, a dark surface, or an object. (b) The hero turns away from the secondary or *vice versa*. The hero puts his fingers into his ears or holds his hands before his eyes. This type of organization may be looked upon as a mixture of isolation and denial. (c) The persons are referred to different frames; they belong to different levels of reality or the secondary is a reflected image of the hero or they "do not have any connection with each other" or one of them is in perspective in space, the other not.
Mixed type (isolation and repression): the secondary, but not the hero, is a picture; (isolation and denial): "they are not conscious of each other's presence".
(2) The secondary is a white spot. (Fig. 11)
Mixed type (isolation and repression): lighted lamp, bright window.

(3) There is no secondary at all through the whole series, not even in the form of a threatening dark part of the field.
The secondary person is not seen, though the main person has appeared more or less in detail during many previous exposures.

(4) There is a secondary who is, however, neither threatening nor even unsympathetic. (Fig. 3) These structures represent mixed types of isolation on one hand and of denial or reaction formation on the other hand.

(5) After one or many persons have been seen at one or many previous exposures, the persons disappear at one or many subsequent exposures: phase discontinuity. (Fig. 11)
Phase discontinuity at one exposure and in one series only may be due to blinking.
Discontinuity may affect (a) the whole visual field (zero phase), (b) hero only (hero discontinuity), or (c) only the secondary (secondary discontinuity), or it may affect a dark, threatening spot at the secondary person's place (threat discontinuity).
Mixed type (isolation, 1 and 5): the whole picture is seen as "unreal", "like a dream or a phantasy".

(6) There are no changes of contents all through the series.
The contents may be essentially correct from the first exposure and afterward with respect to schematic characteristics (the hero's age and sex, etc.).

Denial

The threat is explicity denied in the S's report.

Mixed type (denial and isolation): The secondary is "a threat which has not been drawn correctly," or the whole picture is said to represent "a puppet show." In these cases the threat is partly denied, and partly isolated as incorrect.

Reaction formation (Fig. 6)

The threat is turned into its opposite.

Examples: The secondary is "nice", "protective" or "friendly" to the hero.

In some cases it would be difficult to make any sharp distinction between denial and reaction formation, e.g., when the hero smiles or when the emotional atmosphere is experienced as "pleasant".

Identification with the aggressor (Fig. 7)

The role of the main person is reversed, the hero becoming the aggressor. Mixed type (identification with the aggressor and reaction formation): the hero protects the secondary.

Turning against the self (Figs. 10 and 12)

The hero or the hero's instrument is damaged or worthless, or the hero's instrument is a threat to the hero.

(1) The hero or his instrument (corresponding with, e.g., the violin in the picture TAT nr 1) is a sick, bleeding, crying, or dead person, or a person committing suicide.

(2) The hero's instrument is something damaged or broken: a ragged toy, a broken tool. In some cases the whole picture is seen as "an explosion," "the Guernica."

(3) The hero's instrument is something dark *and* threatening.

Defensive organization which is not directly identifiable as a classical defense mechanism: Identification with a female role.

(1) The hero is a female person and the hero's instrument or tool a rounded or/and hollow object (ball, marble, etc.).

(2) The hero is a woman or a girl, and the hero's instrument a babydoll in the woman's (girl's) arms.

DISCUSSION

It has proved possible to identify, in a group of aviation cadets, types of precognitive defensive organization previously found in compulsion neurotic and (anxiety) hysteric patients, and also to associate preliminarily other types of pre-cognitive organization with the defense mechanisms of denial, reaction formation, identification with the aggressor, and turning against the self. Results obtained from predictions of failure and success in primary training of aviation cadets on the basis of ratings of defensive pre-cognitive organization, seem to substantiate the assumption that such organization may be referred to the classical defense mechanisms.

It should be stressed that this analysis of pre-cognitive defensive organization is a preliminary one. Much research work with groups of abnormal Ss, and with single cases diagnosed by psychoanalysts, will be required in order to state more exactly which type of pre-cognitive organization to refer to what specific defense mechanism.

The operational definitions of defensive organization in this article refer to one single exposure (phase) only, or to the sequence of two exposures (phases). We have refrained from discussing the questions concerning the strength of the (single) defensive organization, the significance of the pre-cognitive level, the various combinations of pre-cognitive organization, and the types of sequence. We are working through these areas and at the same time trying to establish rating procedures for personnel selection and for clinical diagnosis (the PDO-test, 8). It is supposed that diagnosis of neuroses *via* functions (in our experiments = pre-cognitive defensive organization) should be preferred to that *via* symptoms (1 p. 194).

SUMMARY

In experiments with tachistoscopic exposure of TAT-like pictures, exposure time being repeatedly increased until nearly correct recognition, a threat to the hero was introduced. Types of defensive (visual) organization below the threshold of correct recognition are preliminarily classified and referred to the defense mechanisms of repression, isolation, denial, reaction formation, identification with the aggressor, and turning against the self. Other types of responses, too, are marked off as supposedly defensive. A number of facts and arguments for associating pre-cognitive defensive structures with the classical defense mechanisms are discussed.

REFERENCES

1. Fenichel, O. *The psychoanalytic theory of neurosis*. New York: Norton, 1945.

2. Flavell, J. H. and Draguns, J. A microgenetic approach to perception and thought. *Psychol. Bull*. 1957, *54*, 197-217.

3. Freud, Anna. *The ego and the mechanisms of defence*. New York: Internat. Univ. Press, 1957.

4. Freud, S. *Inhibitions, symptoms and anxiety*. London: Hogarth, 1949.

5. Klein, G. S. The personal world through perception. In R. R. Blake and G. W. Ramsey (eds.), *Perception: an approach to personality*. New York, 1951.

6. Kragh, U. *The actual-genetic model of perception-personality*. Lund: C. W. K. Gleerup, 1955.

7. Kragh, U. Pathogenesis in dipsomania. An illustration of the actual-genetic model of perception-personality. (To be published)

8. Kragh, U. Analysis of pre-cognitive defensive organization: a new method for diagnosis and personnel selection (the "PDO-test"). (To be published)

9. Kuhn, R. Maskendeutungen im Rorschachschen Versuch. *Monatsschr. f. Psychiatr. u. Neurol.*, 1943, *107*, 1-60 and 1944, *109*, 169-256.

10. Murphy, G. *Personality: a biosocial approach to origins and structure*. New York: Harper, 1947.

11. Sells, S. B. and Holtzman, W. H. Prediction of flying success by clinical analysis of test protocols. *J. abnorm. soc. Psychol.*, 1954, *49*, 485-490.

12. Smith, G. The serial mirror-drawing test. *Acta Psychol.*, 1957, *13*, 288-298.

13. Smith, G. Visual perception: an event over time. *Psychol. Rev.*, 1957, *64*, 306-313.

14. Smith, G. and Henriksson, M. Studies in the development of a percept within various contexts of perceived reality. *Acta Psychol.*, 1956, *12*, 263-281.

15. Smith, G. and Kragh, U. Do microgenetic sequences reflect life history? An illustration. *Acta Psychol.*, 1955, *4*, 504-512.

16. Werner, H. The concept of development from a comparative and organismic point of view. In *The concept of development: an issue in the study of human behavior*. Minnesota, 1957.

Received November 12, 1958
Revision received April 30, 1959

Projective Test Assessment of the Effects of Sleep Deprivation[1]

NATHENE TURK LOVELAND
and
MARGARET THALER SINGER
Walter Reed Army Institute of Research

Although many investigators (3, 5, 16) report "alterations in personality" among the most important manifest effects of prolonged sleep loss, findings from specific personality test measurements are lacking.[2] The so-called "personality changes" attributed to acute sleep loss usually refer to three features which are described as nearly universally experienced: hallucinatory experiences, irritability, and subjectively felt changes.

Pilot studies of prolonged sleep loss by the present investigators and their colleagues revealed the need for more precise operational definitions of such changes and helped us reach the following conclusions:

1. Definition of the stress stimulus (e.g., a certain number of hours of sleep deprivation) does not constitute an adequate operational definition of the stress, since it is variably experienced, reacted to, and communicated by different subjects.

2. Reactions attributed to sleep loss have not been adequately screened from reactions to the experimental setting which also is variably experienced. For example, to some subjects, the Walter Reed experimental setting was a bonanza of free snacks and attention for which sleep loss was a small price to pay; for some subjects it was a frustratingly restrictive interlude, where deprivation of privacy, freedom of movement, decent clothing and women, was a heavy addition to the load of sleep deprivation; for others it was primarily a challenging, competitively stimulating experience, and for still others the setting was relatively unimportant.

Various methods of handling the subjects is another aspect of the experimental setting which may affect the kind of "personality changes" found. For example, in the Walter Reed project where the subjects were handled gently and permissively, increased irritability was not clinically manifest. Similarly, the incidence and kind of hallucinatory experiences may be affected. Myths about what happens to subjects during prolonged loss are transmitted in the literature and may affect the results through both staff and subjects. Further, the interview methods used may channel what is communicated so that stereotyped interactions are set up which elicit biased answers. For example, what one examiner asks may influence a sleep-deprived subject to reply in ways that will class his experience as a hallucination whereas another questioner in another setting may elicit mere sensory disturbance reports from him. Similarly, the questioner may inadvertantly affect the incidence of hallucinations reported in the different sensoria.

3. Precise definitions of the non-

---

[1] We are indebted to Major Harold Williams, Chief of Clinical and Social Psychology, and Dr. Ardie Lubin, Research Psychologist, both of WRAIR, Forest Glen, Maryland, for their advice on the statistical as well as many other aspects of this study; to Dr. David McK. Rioch, Director of the Division of Neuropsychiatry, WRAIR; to Miss Elizabeth Broomhead, Chief Clinical Psychologist, National Naval Medical Center, Bethesda, Maryland, and to Dr. Marion Handlon, Staff Psychologist, Chestnut Lodge Sanatarium, Rockville, Maryland, for their blind analyses of our Rorschach records; to Mr. Jim Kincannon for his analysis of our Iflund results, and Miss Betty Shanks of WRAIR for her Devos scoring of our Rorschach records.

[2] Tyler (15) reported that group Rorschach examinations given before and after 100 hours of wakefulness showed no significant changes.

verbal, behaviorally non-overt, subjectively felt changes are especially hampered by linguistic limitations and here, just the process of describing to another person may alter the felt state.

4. Testing, as with describing subjectively felt changes, may alter the state being tested. Those who have worked with people subjected to prolonged sleep loss have been impressed, as we were, with the subject's capacity to pull himself together, alerted by the stimuli of test and tester, and to respond more or less as he did before sleep deprivation, no matter how he appeared or behaved between tests.

5. Finally, we are not sure precisely what personality tests measure, nor is it known whether or how they would be sensitive to short-term alterations of personality functioning.

This exploratory paper deals with two major types of questions:

1. What, if any, changes do projective tests show which are attributable to sleep loss?

2. From the projective test performance before sleep deprivation, can sleep deprived behavior be predicted? Of the many psychological and physiological aspects of sleep deprived behavior which might profitably be investigated in this way, for only the following two were criteria available:

a. How well will the sleep deprived subject maintain his mental and psychomotor efficiency?

b. Which sleep deprived subjects will hallucinate?

THE RESEARCH SETTING

In the 1957 WRAIR sleep deprivation project, a research group composed of neurophysiologists, psychiatrists and psychologists studied the effects of 98 hours of sleep deprivation on 25 enlisted men from an Army field hospital training unit who volunteered for the experiment.

The subjects reported in groups of ten for a twelve-day period. Each of the five groups was divided into five experimental and five control subjects roughly matched for intelligence. After an orientation day, there were three control days. From the beginning of the fifth day, the experimental group was kept awake for 98 hours. Following a one-day break during which the experimental group were sleeping, there were three more control or recovery days.

The 25 experimental and 25 control subjects were confined to a suite of rooms from the first orientation day through the last recovery day. Both groups were in hospital garb. The suite of rooms was equipped with materials for handicrafts and games, with television and radio sets, books and magazines and a refrigerator for snacks.

A nurse, several medical corpsmen, and members of the staff kept the men under close observation, especially during the sleep-deprivation period. Those persons and the subjects themselves helped those of the men who needed it to stay awake during their sleepiest phases by walking, playing games or talking with them. The attitudes of the subjects toward the experiment and the staff were excellent for the most part, with no one dropping out of the experiment before its completion.

EXPERIMENT DESIGN

Four projective tests were administered to the fifty subjects on three occasions spaced as follows, so that each subject's sleep deprived performance could be evaluated in the light of (a) his own performance before sleep loss and after his "recovery" sleep, and (b) the performance of roughly matched control subjects given the same testing schedule but allowed to sleep eight hours each day:

1. Baseline test (on the third control day).

2. Sleep deprivation test (on the last experimental day after some 80 hours of wakefulness on the part of the experimental subjects).

3. Recovery test (on the third recovery day).

Exactly the same form of the four tests were readministered in the same order in the same testing room, and for the most part, by the same author. The three performances of a given subject in each of the four tests were scored at the same time to promote consistency in scoring.

The four projective tests used[3] were:

1. The Rosenzweig test (14), scored according to the directions in the manual.

2. The Iflund test (6), analyzed for shifts in order of recall.

3. The Glad test (4), scored for "interpersonal" qualities in verbalization according to the directions in Leary's manual (8). The scoring was done blind, and the order in scoring the three performances of each man was randomized as was the order in scoring the experimental and control Ss.

4. The Rorschach test (13), analyzed on the basis of

a. Scores:

(1) Thirty-eight different standard scores,[4] ratios, and percentages were calculated. Having first agreed on a common scoring system and spot-checked for reliability of scoring, each author scored the records of the subjects she had tested.

(2) The affective tone of the content was quantified by the Devos method (2).

b. Clinical interpretations:

(1) By the authors:

(a) A-posteriori interpretive analysis of differences between sleep deprived and non-sleep deprived performance.

(b) Prediction of which sleep deprived subjects would hallucinate.

(c) Subsequent a posteriori qualitative description[11] of differences between the baseline Rorschach performance of the subjects independently rated as "hallucinators" and "non-hallucinators."

(2) By two consultant Rorschach experts:[1] (whose interpretations were "blind" in that they had no contact with the experiment other than the Rorschach protocols, but were given the description of the research setting, so to that extent were working in context).

(a) Selection of the sleep deprived protocol from pairs of records of the experimental subjects. One consultant was given 12, the other 13, randomly selected protocols of the 25 experimental subjects in pairs and told that one of each pair was given before, and the other after 80 hours of sleep deprivation. Obvious retest clues such as "I remember this from last time," and reaction time were deleted.

(b) Selection of the experimental pairs from the control pairs. Each consultant was given the experimental pairs she had not seen before plus an equal number of control pairs, was told these would be presented to her in random order. Nothing but obvious sleep deprived remarks were deleted since the order of administration within each pair was given.

---

[3] The Rorschach test, in which the authors were most interested and experienced, was given more exhaustive treatment than the other three projective tests. Even the experimental design was more appropriate for the Rorschach than for the other tests. For example, the Iflund test as used here could not be submitted to an expert for blind differentiation of experimental test from experimental retest, or experimental test and retest from control test and retest, on the basis of sleep deprivation effects, because one could tell at a glance which was which from the number of cards recalled at first showing.

[4] The 38 separate standard Rorschach scores analyzed were t_c, $t_{\text{non-c}}$, av.t, #R (number of responses), number of rejections, M. FM, m, FC, CF + C, c (all shading), #P, P%, W%, Dd%, S% (all space responses), F%, F + %, extended F + %, H%, A%, Anat.%, % other stereotype, EB% (ratio of M + Sum C to R), eb% (ratio of FM + m + c to R), M% (ratio of M to M + Sum C), M'% (ratio of M to M + FM), M"% (ratio of M to M + FM + m), FM'% (FM + m to FM + m + c), C% (Sum C to Sum C + Sum c), %R to last 3 cards, W'% (ratio of A + H to A + H + Ad + Hd), A + H − Ad − Hd, M + Sum C, M − Sum C, FM + m + c, FM + m, −c.

(c) Prediction from the subject's baseline record of how well he would stand up under the stress of prolonged sleep deprivation in terms of a rating scale[5] hereinafter referred to as the *h-rating.*

(d) Prediction of which subjects would hallucinate when sleep deprived. Here the consultants performed two operations:

1. First they were asked to predict whether or not the subject would hallucinate under the stress of sleep deprivation and to state the reasons for their predictions. No other directions were given.

2. Two months later each was again given the baseline Rorschach protocols of the 16 men for whom independent hallucination ratings were available (see Hallucination Criterion below) along with both the a-posteriori descriptive summary[6] of the differences between the baseline Rorschach records of the subjects classified as hallucinators and those not so classified, and a checklist[7] derived therefrom, then asked to:

(a) Rate these 16 subjects on each of the seven items on the checklist.

(b) Label each subject diagnostically. In addition. they were asked to state whether "hysteric traits" or "obsessive traits" were more prominent, regardless of the diagnosis.

(c) Predict which subjects would hallucinate after prolonged sleep loss, basing their judgment on the authors' descriptive summary. They were given no information as to the success of their prior predictions.

CRITERIA

1. *Hold (H) Criterion:* The following six tests were used to assess how well the subjects maintained their own mental and psychomotor efficiency level on retest because they showed significant mean decrement with sleep loss, and were administered at about the same times as the projective tests to a large enough number of the men so that each of the 25 experimental and 25 control subjects had been given at least three of the six tests.

a. An *auditory vigilance* task requiring the subject to press a lever when and only when a critical signal occurred (17).

b. A *reaction time* task requiring the subject to respond as rapidly as possible to a visual signal (17).

c. A *concept attainment* task requiring the subject to determine the properties that defined class membership (17).

d. An *adding* task requiring the subject to add pairs of single digit random numbers as fast and as accurately as possible (9).

e. An *immediate recall* task requiring the person to recall all the Iflund cards after as few re-showings of the cards as possible (9).

f. A *rhythm* task requiring the subject to press a button at various rates ranging from once per second to once every eight seconds (10).

Sleep deprivation did not have a general effect on any given subject in all these tests; it was not uncommon to find a sleep-deprived subject who improved as well as the best control subject on one of these tests, yet deteriorated drastically on another. Nevertheless, it was possible to rate the men on a six-point scale, hereinafter referred to as the *H-criterion,* ranging from those who held their own or improved in most of these tests (rated as "6"), to those who fell down on most of them (rated as "1"). Independent rating of the men in this respect by one of our statistical consultants compared reliably with the authors' ratings.

---

[5] Place each subject on a six point scale as to how well he will probably stand up under the stress of prolonged sleep deprivation, rating as "6" the subjects you think most likely to hold their own or improve on their pre-sleep deprived efficiency level in mental and psychomotor tasks, and as "1" the subjects you think most likely to fold under stress.

[6] Cited in footnote 14.

[7] Cited in footnote 15.

2. *Hallucination Criterion:* From tape recording of sleep-deprived psychiatric interviews plus the clinical observations of staff members, 16 of our 25 experimental subjects were rated by a staff psychiatrist and psychologist (11) on a six-point hallucination rating scale. This ranged from "no reported changes" through "illusory changes" to reported experiences where the subject labelled or interpreted the illusory change and was enough confused about, or, for a time at least, convinced of the reality of the experience to act upon it (e.g., not just that spots on the linoleum floor seemed to the subject to move, but that he thought they might be bugs and tried to stamp on and squash them). Only the latter subjects were classed as "hallucinators."

RESULTS

I. *Sleep loss effects on projective test performance.*

Our over-all conclusion from the results of repeated projective tests[8] is that prolonged sleep loss leaves personality structure essentially unchanged, but does modify how, and how much of himself, the subject communicates. The sleep deprived men changed significantly more than did the controls on retest, but like the controls, *how* they changed was a complex function of the interaction of their long term personality adjustment with the whole experimental setup, and not of the sleep loss alone.

Findings which led to these conclusions:

a. From statistical analysis of scores:[9]

(1) Only three of the more than a hundred different test scores showed changes in central tendency significant at the .05 level of confidence or better:[10]

(a) The Rorschach M% (ratio of M to M + Sum C) increased with sleep deprivation (.01 level of confidence).

(b) The sado-masochistic Iflund card was recalled earlier after prolonged sleep loss. (.01 level of confidence.)

(c) The Devos Rorschach N% (% of responses neutral in affective tone) increased on the second, sleep deprived period testing to about the same extent for both the experimental and control subjects but the experimental subjects increased their N% even more on the third, recovery period performance whereas the control subjects returned to their baseline levels.[11] (.02 level of confidence.)

Since three out of 100 changes might easily appear significant by chance, any or all three of these may be spurious results. Further, the clinicians' analyses did not support the hypothesis that these findings were attributable to sleep loss.

(2) The Rorschach test showed no cumulative over-all effect of sleep deprivation on scores.[12]

(3) Only two of the more than a

---

[8] It may be that the first experience with a projective test sets up a pattern of response so that subsequent use of that test material is colored by this initial experience and remembrance. An alternative explanation of the paucity of change found here, and the one we favor, is that these tests measure aspects of personality *structure*, which is fairly stable.

[9] Since we had no evidence on which to base a priori hypotheses about score changes to be expected with sleep deprivation, only two-tailed tests of significance were used.

[10] Kendall's W was used to test for trends from baseline through sleep deprivation to the recovery period.

[11] Tyler's finding (16) that "tests on the morning after recovery sleep showed no changes from pre-experimental control values other than those due to learning" was not the rule in our data. Further, clinical evidence of delayed reactions to sleep loss and of considerable individual variation in rate of recovery, reported by our staff observers, supports our impression that the recovery period performance cannot be assumed to be a "recovered" performance, thus cannot be used as a second sample of baseline performance.

[12] The nature of the tests, and our lack of a priori hypotheses as to the direction, if any, toward which sleep deprivation would move the scores, preclude an adequate assessment of the possibility that prolonged sleep loss

hundred scores showed changes from baseline to sleep deprived performance that were differentially related to their respective baseline scores:

(a) Subjects who gave less than 20 baseline responses (#R) tended to give even fewer responses after prolonged sleep loss (chi-square test, .02 level of confidence).

(b) Subjects who gave less than six popular responses (Beck P) (1) tended to give a decreased #P after prolonged sleep loss (chi-square test, .01 level of confidence).

Although no such test-retest relationships proved significant for the control subjects, again two out of 100 scores might easily show a significantly curvilinear test-retest relationship by chance. Furthermore, in most cases the change was very small, often amounting to a difference of only one R or P, so that, for a sample the size of ours, replication would be especially necessary. In the case of the #R, replication with the same results would still not constitute evidence that the change is a function of sleep deprivation, since it has been our experience that the retest #R tends normally to be curvilinearly related to the original #R, i.e., that subjects with low R tend to decrease their number of responses on retest whereas those with relatively high number of responses are more apt to hold their own or increase, contrary to the more usual homeostatic tendencies. The fact that this was found to a significant degree for the sleep deprived subjects and not for the control subjects suggests that the sleep deprivation effect, if any, was an accentuation of an already existing relationship.

(4) The experimental subjects showed a greater absolute amount of test-retest change than did the control subjects, not only, and not even especially, on test scores whose central tendencies changed most.

(a) For every one of the 38 Rorschach standard scores, the sum of the absolute amount of change was greater for the experimental than for the control subjects.

(b) For only four scores, however, was the absolute change significant (Mann-Whitney U test):

1. H% (.001 level of confidence)
2. Average reaction time (.01 level of confidence)
3. C% (Sum C to Sum C + Sum c) (.01 level of confidence)
4. Dd% (.01 level of confidence)

(c) A crude discrimination score, computed by summing these four scores was 70 per cent successful in discriminating the experimental from the control subjects when the median was used as a cutting point, and the optimal cutting point was 82 per cent correct.

b. Findings from the consultants' analyses:

(1) Neither consultant had better than chance success in discriminating between the baseline and sleep deprived performance of the experimental subjects. Both reported that the decisions were difficult, often having to be forced, because (a) in a third of the cases they found essentially no differences between the two records of the same man, and (b) when they did consider the records enough changed to suggest that something other than a brief lapse of time occurred in the intertest interval, the changes were still relatively slight, never basic, and seldom simply or consistently in a single direction.

Each consultant reported independently that she usually selected the less adequate as the sleep deprived per-

---

might have an over-all cumulative effect on central tendency even though so few of the separate scores changed significantly. In the case of the Rorschach test, however, we hazarded a guess that sleep loss would, if anything, increase the mean of the reaction time, the A%, the S%, other stereotypy, and the number of rejections, and lower the mean #R, the F + %, the P%, the C%, the M'%, and the W'%. Accordingly all these variables were added to form a single sum score, the Kendall W of which was not significant.

formance. We know of no established criteria for adequacy of adjustment but, to the extent that their value judgments were valid, their negative results suggest that sleep deprivation does not make for less adequate Rorschach performance.

However, the value of these negative findings as evidence that sleep deprivation does not significantly change Rorschach performance is weakened by the following methodological artifact: the order of administration was not given because the consultants knew that the retest was always the sleep deprived performance. In essence their goal was discrimination of test from retest on the basis of sleep deprivation effects; in practice they sometimes found themselves deciding which of the two records was sleep deprived on the basis of retest effects, in spite of conscientious efforts to the contrary.

To the extent that this occurred, consciously or unconsciously, their analysis in this operation became an unmeasurable mixture of a priori and a posteriori judgments about sleep loss effects. Thus even had the discriminations been highly successful, they might have had little to do with sleep deprivation. The varying accuracy of their judgments about retest effects further complicates interpretation of their negative results on this operation. The unreliability of retest clues is seldom recognized, so deceptively logical do they appear on hindsight. For example, in a few of these cases, the authors had feared that even after deletion of reaction time and obvious retest comments, the practice effect was so obvious it would give the show away, whereas the consultants reported retest bias in the opposite direction.

(2) The consultants were 68 per cent[13] correct (significant at the .05 level of confidence) in differentiating the experimental from the control records, given the baseline and retest record of each subject in pairs, with the order of administration correctly labelled. Each reported independently that she had leaned more heavily on the amount than on the kind of change, and in fact, most of their errors in judgment consisted in labelling as "experimental," control cases where they found appreciable change, and labelling as "control," experimental cases in which they found relatively little change. They reported appreciable test-retest differences significantly more often in the experimental pairs than in the control pairs, (17 experimental vs. 10 control). No significant generalizations emerged from their descriptions of what to them constituted "appreciable change" but partial clarification comes from the fact that in 8 of the 25 experimental pairs and only 3 of the control pairs they described the "appreciable change" largely in terms of what they called signs of fatigue (e.g., compared with his original performance the man became slap-happy, more careless, showed depletion or conservation of energy).

c. Authors' a posteriori analyses:

(1) More of the experimental than control records appeared appreciably changed. In one third of the Rorschach records of the experimental subjects and two thirds of the control subjects, essentially no test-retest differences appeared.

(2) For the rest, where changes did appear,

(a) In no case was there basic change in personality structure. Some subjects showed more of themselves and some less, some loosened, others tightened their controls, but it was the self-expression and not the self expressed which changed.

---

[13] While on the surface it appears as if the clinicians were less successful than the sum of the scores H%, t, C% and Dd% in their discrimination of experimental from control subjects, the reverse is probably the case since their judgments are a priori whereas the scores were the a posteriori discriminations of four scores selected out of 38, and it is very likely that the score-based per cent of correct clasification would be decreased on a cross validation sample.

(b) The experimental subjects changed more than did the control subjects but no kind of sleep deprived change occurred which was not also found among the retest changes of control subjects.

(c) No kind of change occurred often enough to be considered a characteristic sleep deprivation affect. Each subject seemed to be changing in his own way, which appeared to be a complex function of the interaction of his baseline personality adjustment with the whole experimental set up and not a function of sleep loss alone.

(d) No kind of change occurred significantly more often among the experimental than among the control group with the following possible exception, which at least partially described the change in self-expression or communication: while both the experimental and control subjects often showed the retest practice effect of verbalizing their perceptions in less detail but more glibly, in 7 of the experimental cases and only 3 of the control cases, retest communication seemed either more drastically curtailed and condensed than normal, or, if less curtailed, the added verbiage was more redundant than enlightening, revealing an "anything goes" attitude. The fact that, with one exception, these were the same men reported by the consultants as "fatigued" indicates reliable spotting of essentially the same quality.

(e) Only one generalization predicted the test-retest changes of all the subjects, experimental and control, better than the hypothesis that there would be essentially no change: the task-involved subjects who (either because of inner standards or "other" directed drives to please) marshalled their resources at the first challenge of the relatively unfamiliar, unstructured Rorschach test, either held their own or increased in this respect on retest. Those who were little interested, challenged, or involved originally, tended to fall even farther short of their productive capacity on retest.

Reliability was high between the way the authors rated the subjects in this respect and the consultants' h-ratings, which in turn correlated significantly with how well the man stood up on retest in a variety of nonprojective tasks (H-criterion). Further, it will be recalled that the #R, which was found to be the most important single indicator of the h-rating by all four clinicians, showed a small but significant curvilinear test-retest relationship.

(f) Those who changed most in the group as a whole, experimental as well as control, appeared in general to be the more conflict ridden, loosely defended neurotics (and not, as we had anticipated, those with the most schizophrenic-like records, who were among those showing least change). There was insufficient agreement among the authors and the two consultants to substantiate this general impression adequately. However, the psychiatrist (12) who conducted and analyzed the psychiatric interviews of these subjects reported that it was the loosely defended subjects who showed the greatest sleep deprivation effects. Further, he too concluded that personality structure was essentially unchanged by sleep deprivation when he found that the factors which differentiated the sleep-deprived from the control interviews were clearly present in the baseline Rorschach personality assessments.

(g) Reliability among the clinicians as to which subjects did and did not show essentially any change was high:

82%	agreement among authors and consultants
84%	agreement between consultants
68%	agreement between clinicians and optimal cutting point of 4-score sum above described.

II. *Prediction Results.*

Using the Rorschach alone, it was possible to predict (a) to what extent a man would maintain performance on a wide variety of tasks during the sleep deprivation period, and (b) which men would report hallucinations and which would not during the sleep deprivation period. However, the fact that the retest efficiency of the control subjects was predicted equally successfully by the clinicians raises the question of how much of the predicted effects are attributable to sleep loss.

Findings which led to these conclusions:

1. Prediction from the baseline Rorschach performance of how well the man would hold up (H-Criterion):

a. Only one of the projective test scores, the number of responses (#R), differentiated the subjects who stood up well under sleep deprivation from those who showed decrement in most of the six tasks of the H-Criterion significantly better than chance (r = .42, .05 level of confidence). The #R it will be recalled also predicted its own direction of change in the testing instrument itself.

b. The consultants' "blind" a priori predictions of how well the subjects would stand up under stress (the h-ratings) correlated with the H-Criterion significantly better than chance (r = .43, .05 level of confidence).

Neither of these results can be assumed to be predictions of sleep loss effects since:

(1) The consultants' h-ratings of the *control* subjects predicted their retest efficiency (H-Criterion) at the same level of confidence as for the sleep deprived subjects.

(2) One out of 100 score changes might well appear significant by chance. While the h-rating finding appears to support the #R finding, especially since the clinicians found the #R their most important single indicator of h-rating, it is supported not as a sleep deprivation effect but as a normal predictor of test-retest change. Further, though the #R did not predict the H-Criterion for the control subjects significantly better than chance, there was a tendency in that direction (r = .23). The fact that #R predicts the H-Criterion significantly better than chance for the experimental and not for the control subjects appears largely a function of the significantly greater absolute amount of change in the experimental subjects on retest in both the projective and nonprojective tests.

2. Hallucination predictions:

a. Only one of the projective test scores, the number of Beck popular responses (#P), successfully differeniated the subjects rated as hallucinators by other staff members (Hallucination Criterion) from those not so rated (r = .62, .02 level of confidence). The #P it will be recalled also successfully predicted its own direction of retest change for the sleep deprived subjects in the testing instrument itself.

Although again one out of a hundred relationships might easily appear significant by chance, it is not surprising that a relatively small #P (below average perception of things as others see them), which is one of the classic Rorschach "signs" of schizophrenia, should be a correlate of our "hallucinators." It cannot be assumed, however, that the hallucinatory experiences of sleep deprived subjects are the same phenomenon as those of schizophrenics nor that it was primarily those with schizophrenic personality traits to start with who hallucinated with sleep loss. Eleven of the 16 men for whom hallucination ratings were available were classed as hallucinators according to the criterion used here. While most (4 of the 5) subjects with schizophrenic features in their Rorschach records were classed as hallucinators, the converse did not hold; most of the "hallucinators" did not give Rorschach records, baseline or sleep deprived, with prominent schizophrenic signs. Nor were intelligence, task-involvement, or maintenance of efficiency levels, correlates of the hallucination classification; neither the ACB scores nor the h-ratings or H-rating correlated significantly with the hallucination classification.

b. The consultants classified only 56% of the subjects correctly according to the Hallucination Criterion used here, but they were referring to the hallucinations of schizophrenics. Each reported independently that she was predicting that a subject would hallucinate if and only if schizophrenic Rorschach signs were prominent in his record. Four of the five subjects thus selected by them as probable hallucinators *were* so classed by the Hallucination Criterion and the fifth was considered a chronic denier and a probable hallucinator by our colleagues.

c. The authors, who agreed in their predictions as to whether each of the 16 subjects would or would not be classed as a hallucinator, were 90% correct in their predictions, but they were predicting not just which subjects would hallucinate under stress, which was what the consultants were asked to do, but which subjects would be likely to report or reveal hallucinations in this setting. It seemed very unlikely that such a list would include all those and only those who would have hallucinatory experiences during prolonged wakefulness in any setting. Some of the latter might defensively deny them. On the other hand, among those who do report hallucinations during prolonged wakefulness, some of the so-called "hallucinatory experiences" might easily be artifacts of interpersonal interaction; the subject has to cope not only with his disturbingly unformed, unusual sensations, associations, affect, etc., but also with the difficulty of describing them to the interviewer. Thus even without the biases and anxieties of the interviewer, some subjects might be expected to resort to the anxiety-reducing maneuver of concretizing into "hallucinations" what were merely vague sensory disturbances. The fact that past and current reports of hallucinations during sleep deprivation was a matter of common knowledge to our subjects facilitated such concretizing tendencies.

d. When they were later asked to base their hallucination predictions on the authors' a posteriori descriptive summary[14] of the difference between those classed here as hallucinators and those not so classed, one consultant was 69% correct, the other 81% correct. The two consultants agreed in 12 of the 16 cases (75%) and in 11 of the 16 cases (69%) the authors and both consultants labelled the men the same in this respect. Thus the descriptive summary, in spite of its generalities and wide use of non-specific terms, was useful, indicating that it is possible to predict the subject's hallucination classification *reliably* as well as significantly better than chance.

However, the attempt to evaluate the relative importance of the descriptive summary components as predictors and to arrive at a more precise operational definition by making a specific checklist,[15] securing diagnostic classifications, and the rating of hysteric vs. obsessive defenses, fell far short of success. Not one of the consultant's ratings or nosological classifications showed better than chance agreement either between consultants or with the ratings of the authors on this checklist. Nor did the consultants appear to be using the checklist, since in a few cases, their predictions as to whether or not the man would hallucinate ran counter to most of their ratings on the checklist and in even more cases, their ratings on the same man were about equally divided among scores which would have put the man in the hallucinator, the non-hallucinator, and undecisive class, according to our descriptive summary. Further, their cumulative ratings for each man on these various checklist items proved neither a valid nor a reliable predictor.

---

[14] "Non-hallucinators" appeared to know what they were doing and gave "reality-bound" responses, the kind of banal, ordinary responses usually given for the areas the subject used. They usually gave healthy records from the point of view of controls and defenses. When they gave minus responses, they seemed less sure of these or showed other evidence of realistic critical discrimination.

"Hallucinators" showed one or more of the following:

a. Personal, idiosyncratic material, odd or unusual content, or weird percepts emerged; the basic percepts may have been banal or plus but were personally elaborated, or the elaborations were clearer than the basic percept or the person elaborated on *his* associations more than on the basic percept.

b. The subject's style of handling the test situation and his experiencing of his own ideas was an unclear event. Some sounded as if they were never quite sure what was expected, not sure but what they were just guessing all the time, unsure of their percepts or their terms; they showed imprecise use of language; their ideas trailed off.

c. The hysteric type personality was more apt to be classed as a "hallucinator" than the well-defended obsessive; i.e., not a clearly differentiated world to which he responds; a propensity for intrusive thoughts and affect to emerge into his thinking and be reacted to as if they were in the outer world. (Here not necessarily CF but openly noticeable in content, where a banal or pleasant content may end up dangerous or vice versa; incompatible affect breaks through, not an integrated part of the associative process.

CONCLUSIONS AND SUMMARY

1. Personality *structure*, as reflected in the projective tests used here (Rorschach, Rosenzweig, Iflund and Glad tests), is unaltered by acute sleep deprivation, and personality *functioning* is changed relatively little.

a. There was little test-retest change for the group as a whole, experimental as well as control, when consideration is given to the large number of scores and ratings statistically tested in this study.

b. More of the sleep deprived than control subjects changed, and changed more, on retest, but for both groups it was the style and content of communication and not the personality structure which changed.

c. Where changes were found, they appeared to be a complex function of the interaction of the subject's long term personality adjustment with the whole experimental set up and not a function of sleep loss alone.

d. The increased irritability alluded to in other sleep deprivation clinical reports was not found in this study. Our experiences suggest that some reactions atttributed to sleep loss are largely a function of the experimental setting.

2. Using the Rorschach test alone, it was possible to predict (a) how well the subject would maintain his efficiency in a variety of mental and psychomotor tasks during the sleep deprivation period, and (b) whether he would hallucinate. Although these prediction results were shown to be more convincing evidence of the predictability of behavior from personality structure than of sleep deprivation effects, the following information about the latter emerged:

a. The subjects whose baseline Rorschach performance showed high motivation, either because of inner standards or strong drives for approval, tended to maintain or raise their mental and psychomotor efficiency levels on retest; those not so motivated tended to show retest decrement in a variety of non-projective psychological tests. While this relationships prevailed equally among both the experimental and control subjects, the decrement was accentuated by sleep deprivation.

b. It was the loosely defended neurotics, whether experimental or control, who showed most test-retest change in personality functioning, but again, among the loosely defended neurotics, it was the sleep deprived subjects who showed greater incidence and degree of change.

c. The men who reported hallucinations during prolonged wakefulness were not typically those who showed mental and psychomotor decrement nor those whose personality functioning changed most, but usually fell into one of the following two groups: (1) those characterized by a loosely defended hysteric-like style of adapting and (2) those with prominent schizophrenic traits.

---

[15] Rate each subject on a three-point scale as to:

1. Sureness of percepts.
2. Sureness of performance.
3. Relative sureness about plus and minus responses.
4. Per cent of unusual content.
5. Per cent of personally elaborated content.
6. Presence of intrusive thoughts and affect.
7. Strength of defenses and controls.

REFERENCES

1. Beck, S. J. *Rorschach's test,* Vol. I, II, and III. New York: Grune and Stratton, 1952.

2. Devos, G. A quantitative approach to affective symbolism in Rorschach responses. *J. proj. Tech.,* 1952, *16,* 133.

3. Edwards, A. S. Effects of loss of 100 hours of sleep. *Am. J. Physiol.,* 1941, *54,* 80-91.

4. Glad, D. D. and Shearn, C. R. An emotional projection test. *Percept. mot. Skills* (Sup. 1), 1956, *6,* 1.

5. Handbook Staff, Tufts College, Part 7 of *Handbook of human engineering data.* Medford, Mass.: Tufts College, 1949.

6. Iflund, B. Selective recall of meaningful materials as related to psychoanalytic formulations in certain psychiatric syndromes. Unpublished doctor's dissertation, Univ. of California, Berkeley, 1953.

7. Kleitman, N. *Sleep and wakefulness.* Chicago: Univ. Chicago Press, 1939.

8. Leary, T. *Interpersonal diagnosis of personality.* New York: The Ronald Press, 1957.

9. Loveland, Nathene and Thaler, Margaret. Unpublished sleep deprivation study.

10. Lubin, A. Unpublished sleep deprivation study.

11. Morris, G. and Williams, H. Unpublished sleep deprivation study.

12. Morris, G. Personal communication.

13. Rorschach, H. *Psychodiagnostics, a psychodiagnostic test based on perception.* New York: Grune and Stratton, 1942.

14. Rosenzweig, S. Rosenzweig P-F Study. Author, Western State Psychiatric Hospital, 1944.

15. Tyler, D. B. Motion sickness and physiological problems peculiar to parachutists and other airborne troops. Final report, OEMcmr-282 Part 2: Fatigue and prolonged wakefulness.

16. Tyler, D. B. Effect of amphetamine sulphate and some barbiturates on fatigue produced by prolonged wakefulness. *Am. J. Physiol.,* 1947, *150,* 253-262.

17. Williams, H. L., Lubin, A. and Goodnow, Jacqueline. Impaired performance with acute sleep loss. *Psychol. Monogr.* (in press).

Received November 9, 1958

The Structured Doll Play Test as a Projective Technique for Use *With Children*[1]

DAVID B. LYNN AND ROSALIE LYNN
University of Colorado School of Medicine

Despite much doll play research literature and evidence for the diagnostic usefulness of doll play procedures, no doll play technique has evolved employing simple, standardized, easily quantifiable characteristics of projective tests.

This paper describes the Structured Doll Play test (SDP)[2] which is designed specifically as a clinically useful doll play projective technique (8). The paper also describes research results suggesting the concurrent and construct validity of this instrument.

The SDP was developed because clinical experience with children suggested the need for a projective test for use with children from three through 11 more suitable than those available. The first approach in developing the SDP was to use dolls in the presentation of the Duess incomplete fables (3, 9) rather than simply administering the fables orally. Duess orally presented incomplete fables as a method of studying resistance in the psychoanalysis of children between three and 15. The Duess fables suggested some of the features that are still retained in the test, although it has been modified so often that the similarity between the doll play situations and the fables is now remote.

The SDP consists of presenting the *S* with doll-house dolls in a series of typical family and age-mate situations. Each situation is structured by telling the *S* what is going on, and he is allowed to resolve the situation through doll play. Thirty to forty-five minutes are usually required in administering the test. Children characteristically enter wholeheartedly into the play and give clinically rich responses.

Following is a list of the situations included in the SDP with brief statements of their content:

1A Crib or Bed Choice. *S* is asked to decide whether the ego-doll wishes to sleep in the bed or crib, both of which are presented in the arrangement.
1B Bottle or Cup Choice. *S* decides whether the ego-doll will drink milk from a cup or bottle.
2A Peer Choice. *S* has the ego-doll choose whether he (or she) wishes to be with a boy doll or girl doll.
2B Visitor. The unchosen doll in Situation 2A is presented as visiting the ego-doll, and *S* elaborates what happens.
3A Fighting. Two same-sex dolls are said to be fighting. *S* resolves the situation and is asked to tell what they are fighting about.
3B Misbehavior. Opposite-sex children are said to have done something wrong. *S* is asked to explain.
4A Feeding. *S* chooses and elaborates on which parent feeds the ego-doll.
4B Injury. The ego-doll is hurt. The kind of injury and its seriousness are elicited.
5A Pursuit. *S* chooses which parent is running after the ego-doll and explains the circumstances.

---

[1] This article is based on a paper of the same title read at the May, 1958 Rocky Mountain Psychological Association meeting in Santa Fe, New Mexico. The research findings were from Rosalie Lynn's master's thesis in the Department of Psychology, Purdue University. Acknowledgment with gratitude is made to Dr. Janet Lyon for direction of the investigation, and to Dr. William L. Sawrey, University of Colorado School of Medicine, and Mr. James A. Norton, Purdue University, for statistical consultation.

[2] Published by Test Developments, Box 8306, Denver, Colorado.

5B Reprimand. *S* chooses the parent who is to be the one scolding the ego-doll.

6. Parental Relationship. *S* tells what happens in a situation involving the parent dolls alone together.

7A Separation. The parent dolls leave the ego-doll alone for a while. *S* tells what happens.

7B Hospital. The ego-doll is said to be hospitalized. Reasons for this and consequent events are elicited.

8A Toilet. *S* chooses which parent will take the ego-doll to the toilet. The ego-doll may use either toilet or potty chair.

8B Bathing. Opposite-sex child dolls are bathing together, and *S* relates what happens.

9. Sleeping Arrangement. A double and a single bed are presented, and *S* puts the parent dolls and the ego-doll to bed.

10A Nightmare. The ego-doll is said to have a bad dream. *S* elaborates on this and is asked for content and resolution.

10B Night Fears. The ego-doll is said to be afraid of something he sees or hears during the night. *S* elaborates on this.

Most of the SDP situations also involve one or both parents, often calling for a choice on the part of *S*.

Situations 1A, Crib or Bed Choice, and 8A, Toilet, are presented below to illustrate more fully the nature of the SDP situations. In Situation 1A, *S* is told, "The little boy (or girl, the ego-doll is determined by the sex of *S*) has two places he (she) can sleep. He (she) can sleep in either the crib or the bed. You put him (her) to sleep." *S* is then asked, "Who comes in, Mommy or Daddy?" and, "Then what happens?"

In 8A, *S* is asked, "Which one takes him (her) to the toilet, Mommy or Daddy?" *S* is then asked, "Which one does Mommy (Daddy, depending on the choice) take him (her) to, the toilet or potty chair?"

A study, conducted by Lillie and Lillie (5), suggests that a structured doll play approach may have the advantage of eliciting more clinically useful material than free doll play. Using eight- through 12-year-old male subjects, they compared the effects of a structured doll play approach (though not the SDP) with free doll play using comparable materials. They found that the structured approach elicited significantly more *incident agreements* than free play. By *incident agreement* is meant any obvious parallel between responses in the doll play and a parent interview. Structured doll play also elicited significantly more identification of the *Ss* with the dolls, more hostility, and more parental discipline responses. In addition, the *Ss* tended to accept the structured play better than the free play. The material, which was better elicited by the structured procedure, would seem to be clinically useful.

The SDP uses the standard doll family (mother, father, child) rather than a duplicate of the child's own family constellation. This is done since Robinson (11) found that variation in the doll family constellation had little effect on the scored variables with the exception that identification with the dolls is greater when the child's own family is duplicated by the dolls. The kind and amount of aggression did not differ significantly. In a clinical (rather than research) setting, it is not always possible to obtain valid information concerning the family constellation necessary to duplicate the child's family with dolls. It is felt that the gain in standardized procedure and in simplification by using the standard family outweighs the loss in the *S's* identification with the dolls.

The 10 SDP situations consist of eight which are divided into two comparable sub-situations, thus making 18 situations in all. In each of these eight situations, so divided, the *S* is presented with a choice of dolls, seven of mother or father, one of the boy or girl. Ammons and Ammons (1) conducted a study which suggests that structuring parent-choice situations might be a useful projective device. They found adequate reliability in consistency of choice, and they discovered significant age and sex differences in parent preference. The nature of the choices conformed so well to cultural patterns that some evidence for the validity of the doll play parent-choice technique can be inferred.

In the SDP, after the *S* has made a choice in a given situation, he is administered a comparable situation using the parent doll which was not chosen in the original one. In this way the *S* has equal opportunity to fantasy about both parents. For example, if the mother doll is chosen to take the ego-doll to the toilet in Situation 8A, Toilet, the father doll is introduced in Situation 8B, Bathing. There is an advantage over free doll play in this regard since, in free play, a child sometimes concentrates all his fantasy on one parent doll, ignoring the other completely.

The SDP has eliminated the elaborate setting, the doll-house rooms, the suite of furniture, etc., typical of traditional doll play procedures. All of the SDP materials can be contained in a small carrying case. The test can be administered on a small space such as the typewriter leaf of a desk. It is felt that having so few materials reduces the exploratory and tangential behavior which plagues traditional doll play procedures using elaborate materials. To reduce distraction, only the materials that are used in a given situation are placed before the *S*, the others being kept in the closed carrying case.

The use of doll furniture that is crudely representative rather than realistically detailed, is based on findings in a study by Phillips (10). Phillips found that the use of ambiguous doll figures and block-like toy furniture, constructed crudely to represent items rather than in realistic detail, reduces exploratory behavior. However, extremely ambiguous materials are not used in the SDP because the nature of the test requires the *S* to recognize the furniture (e.g. toilet or potty) and to recognize the doll figures (e.g. mother or father doll).

It is felt that a structured doll play procedure is less conducive to tangential and exploratory behavior than free doll play in that it focuses the child more closely on the clinically rewarding fantasy.

The SDP differs in many ways from the Driscoll (2) and Whitmore (4) doll play kits. The Driscoll kit claims only to furnish standard materials, a 23 x 20 inch, five-room apartment, 27 pieces of furniture, etc., but it does not furnish structured situations. The Whitmore kit offers standard materials and also suggests a number of incomplete stories which might be used with the kit. It does not include choice situations, nor is it designed as a standardized projective test as is the SDP.

SDP Research

Fortunately, the period in Clinical Psychology is virtually ended when a psychologist can originate a test and place it on the market without supporting research. Some research has been completed with the SDP and more is currently under way. The following report of two studies offers results that suggest areas of validity.

In the first study (12), there were 80 mother-child pairs from a typical sailor district in Norway.[3] There were 40 mother-child pairs in a father-absent group (21 boys and their mothers, 19 girls and their mothers). In this group the fathers were sailors and were away from home at least nine months out of the year and sometimes as long as two years or more, with only infrequent and irregular periods at home. There were also 40 mother-child pairs in the control group (20 boys and their mothers, 20 girls and their mothers). The children's ages ranged from eight through nine years six months. The two groups were comparable in the teacher's rating of the child's intelligence and in the father's occupational status. Both groups were essentially middle-class, the sailors all being officers. The children were administered the SDP and their mothers a semi-structured interview.

---

[3] The senior author collaborated with Mr. Tiller in conducting this research at the Institute for Social Research in Oslo, Norway.

In this study of father-absence in Norwegian sailor families, construct validity in the SDP is suggested by the fact that the findings support a theoretical formulation of the effects of father-absence. A number of predictions were explicitly stated prior to the data collection, most of which were supported by the SDP results. For example, it was predicted, and supported by SDP findings, that mothers of father-absent children would be more over-protective than mothers of father-present children, that father-absent children would respond with dependence, and that boys would be more strongly affected by father-absence than girls.

Concurrent validity is suggested by the fact that the SDP discriminated between groups, i.e. the results differentiated between the sexes, and between father-absent and father-present groups. For example, a significantly higher proportion of girls than boys chose the mother doll more often than the father doll. Interestingly, a significantly higher proportion of father-absent than father-present boys chose the father doll more often than the mother doll, and the crib rather than the bed. A significantly higher proportion of father-present boys gave aggressive doll play responses between age-mate dolls than did father-present girls. A significantly larger proportion of father-absent than father-present girls gave high dependency responses in the SDP.

The following is a report of findings concerning the SDP responses of four- and six-year-old children.

Subjects

The subjects were 49 middle-class children from a private school in Indianapolis. There were 26 four-year-olds (12 boys, 14 girls) and 23 six-year-olds (11 boys, 12 girls).

Scoring Procedures

The SDP was scored for dependency, mature-immature choices, and parent doll choice. The child's dependency score was determined by the proportion of dependent to independent responses in the SDP. A response was scored dependent if the child doll was shown to seek help, sympathy, consolation, support, attention, affection, protection, or physical closeness. It was also scored dependent if the child doll was shown as immature, e.g. by crying. Independence, on the other hand, was scored if the child doll showed self-sufficiency or self-assertion, e.g. by carrying out the major part of an action by himself. The agreement between independent ratings by two judges on this variable was 92%.

In the mature-immature coding, a mature choice was scored for bed rather than crib and also for cup rather than bottle. Conversely, crib or bottle were the two immature choices.

In the early modification of the SDP used in the present study, there were only two possible parent choices rather than the eight parent choices in the current revision.[4] In the Play Situation the *S* chose the parent doll with which the ego-doll wished to play a game. In the Construction Situation the *S* chose the parent doll from which the ego-doll wished help in building something with blocks.

Results

In the statistical treatment, analysis

---

[4] Dr. Bertram D. Cohen, Lafayette Clinic, Detroit, Michigan, collaborated in the development of this early modification of the SDP.

of variance tested results for dependency. Chi-square was used in all other tests of significance with the exception that Fisher's exact test was used in one analysis of the data concerning bottle-cup choice where the frequencies were especially low.

Concurrent validity in the SDP is suggested in this study by the differentiation between groups (age and sex comparisons). Construct validity is suggested by the logical relationship between these findings and developmental patterns.

Table I indicates a significant age difference for dependency scores. Table II indicates that, as expected, four-year-olds received higher dependency scores than six-year-olds. Table I also indicates a significant age-sex interaction. Table II shows no appreciable difference for dependency scores between four-year-old boys and girls, but six-year-old boys received lower dependency scores than the girls and than the four-year-old boys.

In Table III, there was a trend, although not statistically significant, for a higher proportion of four-year-olds to make immature doll play choices than six-year-olds ($p.=.08$).

Table IV shows that the greater proportion of four-year-olds making immature choices was primarily accounted for by the bottle choice rather than the crib choice. A significantly higher proportion of four-year-olds than six-year-olds chose the bottle ($p=.01$). In this table a significantly higher proportion of four-year-old boys chose the bottle than four-year-old girls ($p=.05$).

In Table V, there are significant age-sex differences in parent doll choice ($p=.02$). A higher proportion of six-year-olds chose the same-sex parent doll than four-year-olds, i.e. a higher proportion of six-year-old boys than four-year-old boys chose the father doll, and a higher proportion of six-year-old girls than four-year-old girls chose the mother doll.

An inspection of Table V indicates that the six-year-olds chose the parent doll more discriminately than the four-year-olds. A smaller proportion of six-year-olds than four-year-olds chose the mother for Situation 10, Construction, choosing the father instead, and a larger proportion chose the mother for Situation 15, Play. The six-year-olds seem to have decided that it is the function of fathers not mothers to help one build things.

Thus, as would be predicted on the basis of the usual pattern of child de-

Table I—Age and Sex Differences for Dependency Scores

Source	df	MS	F
Sex	1	.047	<1
Age	1	.426	6.45*
Sex x Age Interaction	1	.518	7.84*
Error	42	.066	

* Significant at 5% level of confidence.

Table II—Sum of Dependency Scores

	Age 4	Age 6	Total
Boys	10.15	3.84	13.99
Girls	9.62	7.77	17.39
Total	19.77	11.61	31.38

Table III—Percentage of Immature Choices (Crib over Bed, Bottle over Cup)

	No Immature Choice	One Immature Choice	Two Immature Choices	N
Boys—Age 4	8	33	58	12
Boys—Age 6	55	27	18	11
Girls—Age 4	36	29	36	14
Girls—Age 6	33	50	17	12

Note: Rounding errors prevented the sum of percentages from totaling 100 in all rows in Tables III and V.

Table IV—Frequency of Mature-Immature Choices

	Crib	Bed	Bottle	Cup	N
Boys — Ages 4	8	4	10	2	12
Boys — Age 6	5	6	2	9	11
Girls — Age 4	8	6	6	8	14
Girls — Age 6	8	4	2	10	12

TABLE V—Percentage of Mother Doll Choices in Situation 10 (Construction) and Situation 15 (Play)

	Neither	Situation 10	Situation 15	Both	N
Boys — Age 4	42	33	17	8	12
Boys — Age 6	64	0	36	0	11
Girls — Age 4	50	29	21	0	14
Girls — Age 6	8	17	58	17	12

velopment, the younger children gave more immature SDP responses than the older children. Perhaps it would not be so readily predicted that a higher proportion of the older than the younger children would choose the same-sex parent doll. However, if one conceives of parent doll choice as representing the parent toward which the child strives to identify, then these results seem reasonable. That is, as the child grows older he strives more strongly to identify with the same-sex parent. This interpretation of parent doll choice would help account for the fact that, in the father-absent study reviewed above, a higher proportion of father-absent than father-present boys chose the father doll more often than the mother doll (12). Perhaps the father-absent boy, virtually lacking a father, strives all the more to identify with the absent father, and consequently tends to choose the father rather than the mother doll.

CASE ILLUSTRATIONS

The following case illustrations are presented to give the reader some familiarity with the quality of SDP responses, some notion of the kinds of material the clinician using the SDP has to work with, and an impression of the nature of the relationship sometimes found between SDP responses and data obtained from other sources. In order to cover a wide variety of illustrative responses, brief excerpts are taken from a number of SDP protocols rather than treating one record in depth. The resulting over-simplification is not intended to imply that this instrument should be used in a "cook book" fashion. Neither are these illustrations presented as interpretive guides, for that is beyond the scope of this particular paper.

The *Ss* used in these case illustrations are drawn from two sources. One group of *Ss* were administered the SDP as part of an evaluation at a university medical center child guidance clinic (henceforth referred to as Child G *Ss*). They were referred because of psychological disturbances. The second group were administered the SDP as part of a research project at a university medical center pediatrics out-patient clinic (henceforth referred to as Ped OP *Ss*). No *S* was included in the Ped OP group who came to this university medical center pediatrics out-patient clinic because of a psychological disturbance, but only those who came because of physical illness. Most of the illustrative material coming from sources other than the SDP, used for comparison with the SDP responses, was obtained from a semi-structured interview conducted with the mothers. In some of the Child G cases, material was also obtained from the social worker's interview with the parents and from the psychiatric interview with the child.

The first three examples concern various mature-immature choice patterns (cup - bottle, bed - crib, toilet - potty). In actual clinical use one would never consider the choices in isolation as is done here for simplicity's sake.

The first *S* for consideration is Child G subject *A*. Subject *A* is an eight-year-11-months old boy displaying infantile speech and immature behavior, such as crying easily. *A* considers boys too rough and plays mainly with girls. He is quite close to the mother and relies heavily on her for support, guidance, and protection.

A, despite his age, made all immature choices on the SDP, viz. crib, bottle, and potty.

Ped OP subject *B* is a four-year-eight-months-old girl referred because of recurring upper-respiratory infections. The mother did not feel that *B* feared the doctor, and reported that *B*, on her own, made an effort to be especially clean in preparation for the physical examination, whenever she was to see the doctor. The mother reported that *B* is content to play alone, but, on the other hand, adjusts well to groups also. She referred to *B* as an "easy going child."

This seemingly mature girl, although much younger than *A*, made all mature choices, viz, bed, cup, and toilet.

Child G subject *C* is an encopretic seven-year-11-months-old boy who, according to the mother, "started having trouble with his BMs just before he started going to school."

C made two mature choices (bed and cup). However, the one immature choice that this encopretic boy made was the choice of potty instead of toilet.

The next three examples illustrate patterns of parent doll choices. In the study with the SDP, which was treated in greater detail above, it was found that a significantly higher proportion of father-absent than father-present Norwegian children chose the father doll more often than the mother doll (12). In this study the absent fathers were Norwegian sailors whose occupation kept them away from home for long periods of time. Clinical experience suggests the hypothesis that high father doll choice accompanies father-absence in other than the specific conditions surrounding Norwegian sailor families. High father doll choice seems particularly likely where father-absence is coupled with maternal rejection.

Ped OP subject *D* is a five-year-11-months-old girl whose epileptic seizures are well controlled. She is an illegitimate child who has never lived with her father. The mother admits hostile feelings toward this unwanted child. When *D* was asked, "What do you think makes children sick?" she replied, "Because they don't like their mothers."

D chose the father doll in seven out of eight possible choice situations.[5] This proportion of father-doll choices is very rare, particularly with girls.

Ped OP subject *E* is a 10-year-three-months-old hemophiliac boy who has been separated from his real father since age two due to divorce. A stepfather has been in the home since the boy was six years old. The mother's strong feelings about *E* in connection with his illness are characterized by her comments, "It's all my fault. I'm the carrier. I shouldn't have had him in the first place. I've often had the idea, well, maybe he would be better off dead."

E chose the father doll seven out of eight possible times. In Situation 9, Sleeping Arrangement, *E* placed the boy and the father in the double bed, and the mother doll alone in the single bed.

Child G subject *F* is a nine-year-10-months-old boy who was referred for infantile speech. The father, in this case, is in the home. The mother reported that the child demands a great deal of attention from her. He, in turn, brings the mother candy. Whenever the mother kisses his 15-year-old brother, *F* asks her whether she loves him as much as she does his brother.

F chose the mother doll in all eight choice situations.

Ped OP subject *G* is used to illustrate peer choice in Situation 2A, Peer Choice. *G* is a six-year-11-months old boy referred because of an upper-respiratory infection.

---

[5] There are seven SDP situations in which the *S* is presented with the choice of mother or father doll. Parent choice is also scored in Situation 9, Sleeping Arrangement, making 8 possible choices in all. In this situation the parent doll placed in the same bed with the ego-doll, is considered the chosen parent. In addition, when the ego-doll is placed alone in the single bed, the parent doll placed on the side of the double bed next to the ego-doll is considered the chosen parent.

G's mother reported that he likes to dress up in dresses and go to his girl friend's house. "He could play by the hour with her."

G chose the girl doll in the Peer Choice situation.

Sometimes a specific situation will illuminate a specific problem. Child G *H* is an eight-year-nine-months-old girl who was referred because of encopresis. The mother reports that "she don't seem to know even after her bowels have moved."

H gave the following response to Situation 8A, Toilet:

"Mommy takes the little girl to the potty and she can't go. She doesn't need to, but Mommy makes her go anyhow."

Typically, as the next case illustrates, a particular dynamic pattern may be reflected repeatedly throughout the test protocol, and in a variety of forms.

Ped OP *I* is an 11-year-old epileptic boy whose mother is blatantly overprotective. She so infantilizes *I* that the father complains that she "packs *I* around on a silver platter." Her protective feelings are reflected in her relating an incident in which *I* feared his hair would be cut in preparation for an EEG examination. The mother related that she reassured *I* that they would not cut his hair. The mother exclaimed to the interviewer, "No, my gracious, they couldn't mess that curl up. That would be tragic."

This 11-year-old boy reflected overprotection in Situation 1A, Crib or Bed Choice, by responding as follows:

I chose the crib and said, "He looks like a very young boy." He then made the mother choice and said, "Mother usually comes in first and checks the child. She has it say a prayer and kisses it goodnight."

In 8A, the Toilet Situation, *I* responded as follows:

I chose the potty. He said, "Mommy would unstrap his (the boy doll's) pants and he'd have to go. She would strap his pants again and wash his hands for him."

Situation 9, Sleeping Arrangement, was as follows:

The mother doll, rather than the father doll, was placed in the double bed on the side closest to the boy doll in the single bed. Then *I* said, "He (the boy doll) wants to go to the rest room or wants water. 'Mother, mother, I want water.' She goes and gets it for him."

In another situation the boy doll was said to cry, and in another to ask the mother doll whether she brought him a toy from town.

J is a four-year-five-months-old Child G boy brought to the clinic by the paternal grandmother because of infantile speech. The grandmother said that she has taken care of *J* since his birth because his mother (her daughter-in-law) neglected him, e.g., "She wouldn't even give him his bottle." The grandmother describes the mother's "temper tantrums" during which she has become so angry that she tears buttons off clothes. *J* was described as being so afraid of seeing his mother during her infrequent visits that he would bite his fingernails when he saw her approaching.

J's SDP responses show both oral preoccupation and fear of the maternal figure. In Situation 7B, Separation, *J* gave the following response:

"Boy hide. Mommy come back. She eat that boy. He all gone. She eat daddy. He all gone."

Fearful oral preoccupation was reflected in two additional situations. In Situation 9, Sleeping Arrangement, he said, "Bogy man eats them up," and in Situation 10B, Night Fears, *J* responded, "Bogy man ate the little boy up."

Subject *K* is a nine-year-six-months-old Ped OP girl who was referred because of vulval vaginitis. Four years previously, when she was five, a baby brother was born to whom she showed extreme hostile rivalry. The mother reported, "She (subject *K*) said I couldn't bring him (the baby) home from the hospital. When we got home we couldn't keep her in the same room with him. She would bite him or pinch or slap him all the time if she got the chance. She'd try to push him off my lap. If she got scissors she would cut the nipple off his bottle."

The mother reported that *K* and her brother now get along "wonderful."

However, in SDP Situation 5B, Reprimand, *K* said:

"Well, she comes home and fights with her baby brother. Daddy says, 'Don't fight with him.' He makes her go to bed. He (brother) is only one-year-old. She lays there and cries, and father tells her not to cry, and they all go to bed. She started crying for her mother, and mother says, 'Be quiet,' and she says, 'No.' The girl hit her father and mother. Mother spanked her, and she shoved her brother out, and her father and mother spanked her again."

Situation 6, Parental Relationship, is structured so that the parent dolls are alone. After S relates what transpires while the parents are alone, the child doll is introduced. At this point *K* said:

"The girl tells her father she got all A's today. Then she tells mother, 'I got all A's today.' Mother and father say, 'O.K.' They ask the girl where her brother is. The brother tells mother and father he got all A's today. The girl asks her mother if she likes her, and mother says 'no' so she'll cry."

In Situation 7A, Separation, *K* said, "She goes to the neighbors and the little boy asks, 'Where's your brother?' She starts fighting."

K, in this situation, chose the mother as the parent doll she wished to return to the ego-doll first. *K* said:

"The mother wonders where the little brother is, and the girl says, 'I don't know.' The girl says, 'Give me a drink.' Mother gives her a drink and she throws the glass on the floor and goes to bed."

SUMMARY

This paper described the Structured Doll Play test (SDP), which is designed specifically as a projective doll play technique for use with children. In this paper, literature was reviewed which suggests that a structured approach may elicit more clinically useful material than free doll play, and that the SDP has been developed in keeping with doll play research findings.

Research findings from a study of father-absence with the SDP which suggest concurrent and construct validity were reviewed. An investigation of the SDP responses of 49 four- and six-year-old middle-class children was presented.

Concurrent validity in the SDP is suggested in this study by the discrimination between groups (age and sex comparisons).

A significantly higher proportion of four-year-olds than six-year-olds received high dependency scores. A significant age-sex interaction showed six-year-old boys particularly low on dependency. Four-year-olds tended to make more immature doll play choices than six-year-olds. A significantly higher proportion of four-year-old boys than four-year-old girls chose the bottle. There were significent age-sex differences in parent doll choice, with a higher proportion of six-year-olds than four-year-olds choosing the same-sex parent doll, and choosing the parent doll more discriminately.

Construct validity is suggested by the logical relationship between these findings and developmental patterns.

Research and clinical results suggest that the SDP may well meet the requirements of a useful projective test with children.

REFERENCES

1. Ammons, R. B., & Ammons, H. S. Parent preferences in young children's doll-play interviews. *J. abnorm. soc. Psychol.*, 1949, *44*, 490-505.

2. Driscoll, G. P. *The Driscoll Play Kit.* New York: The Psychological Corporation.

3. Duess, Louisa. Étude experimentale des phénoménes de résistence en psychoanalyse infantale. *Ztschr. f. Kinderpsychiat.*, 1944, *11*, 1-11.

4. Graham, E. E., & Whitmore, Lillian E. *The use of dramatic play for diagnosis and therapy*. Denver, Colorado: Whitmore Drama Kits, 1954.

5. Lillie, H. E., & Lillie, Marcella B. An experimental study of the difference between subjects' responses in a free and controlled play situation. Unpublished master's thesis, Univer. of Denver, 1951.

6. Lynn, D. B. An investigation of hypotheses basic to a concept of relative intensity of interaction as applied to Structural Doll Play test responses. Unpublished doctor's dissertation, Purdue Univer., 1955.

7. Lynn, D. B. Development and validation of a Structural Doll Play test for children. *The quart. Bull., Indiana Univer. Medical Center*, Jan., 1955.

8. Lynn, D. B. Structured Doll Play test manual. Unpublished manuscript (mimeographed), Indiana Univer. Medical School Library, Indianapolis, Indiana, 1957.

9. Mosse, Hilda L. The Duess Test. *Amer. J. Psychother.*, 1954, *8*, 251-264.

10. Phillips, Ruth. Doll play as a function of the realism of the materials and the length of the experimental session. *Child. Develpm.*, 1945, *16*, 123-143.

11. Robinson, Elizabeth F. Doll play as a function of the doll family constellation. *Child Develpm.*, 1945, *17*, 99-119.

12. Tiller, P. O. Father absence and personality development of children in sailor families. *Nordisk Psykologi's Monogr.*, 1958, Ser. No. 9.

Received September 16, 1958.
Revision received December 18, 1958.

Relationship between Story Length and Situational Validity of the TAT[1]

CAROLINE TAYLOR MACBRAYER
Mooresville, N. C.

Significant changes in Thematic Apperception Test (TAT) phantasy have been reported following experimentally produced increases in aggression (3), depression (5, pp. 454-455), sexual arousal (4), hunger (2), achievement motivation (15, 16), and affiliation motivation (1, 19). In scoring TAT stories to reveal these changes, which theoretically result from projection of experimentally aroused motivation into phantasy, various scoring methods have been used. Bellak (3, 5, pp. 445-457) simply counted the number of aggressive words in TAT stories under conditions of no criticism and under conditions of criticism of Ss' stories by E, and also counted the number of depressed words and phrases under posthypnotically induced feelings of depression, as compared to normal. No account was taken of length of stories, data being in terms of absolute numbers of aggressive words or depressed words and phrases, rather than in terms of proportions of total words.

Milam (17) has demonstrated that male college students tell significantly longer TAT stories when the examiner is "as demanding, rejecting, and threatening to the subject as possible" (17, p. 222), or "as accepting, courteous, and friendly as possible" (17, p. 222), as compared to neutral conditions in which the examiner is efficient, routine, and noncommital, mean numbers of words per story being 162.80, 159.53, and 112.48, respectively (17, p. 224). Milam's results strongly suggest that increased motivation results in increased length of TAT stories, and with increased story length, the frequency of almost any type of word or thema might well be expected to increase. In order to demonstrate the situational validity of the TAT, therefore, it is necessary to show that an increase in the specific type of phantasy experimentally induced occurs independently of increased story length.

McClelland et al. (15, 16) have attempted to control the factor of story length in their work on arousal of the achievement motive by limiting TAT stories (written) to five minutes each. Average story length under these conditions was found to be about 90 words (15, p. 404), and these authors feel that ". . . content of the stories is not systematically related to their length" (16, p. 212). Relevant data presented are mean words per story for 28 achievement-oriented high school subjects (M = 77.2) as compared to 18 neutral similar high school subjects (M = 68.3), the difference between the means not reaching statistical significance at the 5% level (16, p. 212). Similar time limits were placed on TAT stories in experimental arousal of hunger (2), the affiliation motive (1, 19), and sexual motivation (4). Variation in story length is certainly reduced by a five-minute time limit, but whether this is an adequate control of story length, or even a desirable one if longer stories are actually more revealing of needs and desires[2], is questionable. Projection of experimentally aroused achievement (15) and affiliation motives (1, 19) was measured by frequency counts of items which increased significantly under arousal conditions. In Clark's (4) scoring of TAT stories for manifest sex imagery after experimentally induced sexual arousal, sexual activity was scored just once for each story. In scoring, priority was given to that type of imagery in each story which was biologically most sexual, the three types being: "(a) primary—explicit or implicit evidence for sexual intercourse, (b) secondary—evidence for the occurrence of such secondary sex activity as kissing, dancing, or fondling, (c) tertiary—characters in the stories perceived as sweethearts, on a date, courting, in love, and so on, but not engaged in either primary or secondary sexual activity" (4, p. 47). Symbolic sexual imagery, on the other hand, was scored by Clark (4) for each story as "strongly" present (weight of 2), "some" symbolism present (weight of 1), or none (weight of 0), depending on to what extent themas which could be interpreted as sexually symbolic were present. Clark's scoring thus gives frequency of sexual imagery more weight in the symbolic than in the manifest sex score, variations in story length being thereby relatively more important in the symbolic score.

---

[1] This research was conducted at Davidson College.

[2] Length of TAT stories which are unrestricted by a time limit has been used in some studies (10, 14) as a criterion of excellence of performance.

The present experiment was designed to determine whether criticism results in a significant increase in length of TAT stories, and if so, whether increase in aggressive phantasy, as measured by numbers of aggressive words in the stories, is chiefly a function of increased story length, rather than being due to projection of increased aggression which has been experimentally induced by criticism. For purposes of this experiment the assumption was made that criticism does arouse aggression, but no assumption was made concerning the nature of the motivational variable or variables intervening between criticism and increase in TAT story length. It was assumed that if increase in aggressive words with criticism is primarily a function of increased length of TAT stories with criticism, four other types of phantasy, presumably unrelated to the experimentally induced motivation of aggression, would show similar increases and that frequency of each of the five types of phantasy would correlate significantly with story length. The specific hypotheses to be tested are as follows:

1. Criticism significantly increases the length of TAT stories.

2. While criticism increases the absolute number of aggressive words in TAT stories, it does not increase the proportion of aggressive words relative to the total number of words in TAT stories.

3. Increase in number of aggressive words in TAT stories with criticism is due to increase in length of TAT stories with criticism, rather than to the projection of experimentally aroused aggression into phantasy.

METHOD

Subjects were 20 psychologically naïve college freshmen, 10 males[3] and 10 females. It was assumed that Ss would more freely project socially disapproved feelings of hostility and aggression into TAT phantasy in the presence of student Es than a faculty E (18), so two male upperclassmen served as Es[4] throughout the experiment. Only the two Es and the particular S being tested were in the room at any time during the experiment. The procedure was similar to Bellak's (3), each S telling six TAT stories, the first three under normal or no-criticism conditions, and the last three under conditions of criticism by the Es. The TAT pictures used were: 18GF, 18BM, 13MF, 3GF, 10, and 3BM, this order being used with one-half of the Ss of each sex, and the reverse order with the other half. Instructions were as follows:

> This is a test of imagination, one form of

---

[3] Data for one male S are not included under Results (N=19 instead of 20), because length of his stories under the first condition, without criticism, fell above the upper limit of the range for numbers of words per story reported by Dana (6) for psychotics.

[4] The author wishes to express appreciation to L. M. Mayfield and E. I. Stevens, who served as Es.

> intelligence. I am going to show you some pictures, one at a time, and your task will be to make up as dramatic a story as you can for each. Tell what has led up to the event shown in the picture, describe what is happening at the moment, what the characters are feeling and thinking, and then give the outcome. Speak your thoughts as they come to your mind. No other person will know who has told what story, so do not be afraid to speak openly and frankly. Do you understand?

The same E made some encouraging remark to each S after the S completed one practice story in response to TAT picture 7GF before the experiment began, and also after S's first and second stories during the experiment. These remarks were "good," "fine," "O.*K*!" (said approvingly) or "*That's* the idea!" After the third, fourth and fifth stories, criticism patterned after that of Bellak (3, p. 361) was made of S's stories as follows:

> [After the third story], "Your stories are not as good as they could be. They are illogical and unstructured. You lack imagination and ideas in your stories. Try and see if you can do better on this one." [After the fourth story], "I hope you do not mind if I am frank, but your stories still are not very good. In fact, I would go so far as to say that they are about the worst that we have had, so let's see you improve on this one!" [After the fifth story], "We have one more picture here for you, though I'm afraid you are almost hopeless. Anyway, put everything you have into this one!"

As soon as each S had completed his sixth story, he was told that he had been fed standard comment, was made to feel that he had done well, and was thanked for his cooperation. Ss spoke into a microphone and were aware that their stories were being recorded on tape. No names were used and full anonymity of results was assured each S by the Es.

Aggressive words and depressed words and phrases in all TAT stories were listed independently by two judges. There was a high percentage of agreement between judges, and where disagreements occurred, a mutual decision was reached after discussion. Total number of aggressive words and total number of depressed words and phrases were thus obtained for each S's three TAT stories under criticism and no-criticism conditions, as well as total number of words in each S's three stories under each condition. Two judges also scored all stories for number of manifest sex words (4), number of symbolic sex themas (4), and number of optimistic words and phrases, the mean for the two judges being used as the score. Coefficients of correlation between scores by the two judges ranged from .86 to .94. Optimistic words and phrases were defined for purposes of this experiment as those falling within one or more of the following categories:

1. *Hope*: things will, or probably will get better or work out.
2. *Faith*: prayer, faithful wife, help from above, etc.
3. *Kindness*: consideration for others or for pets; sympathy, support given to others.
4. *Patience*: only when stated or implied that patience is a virtue.
5. *Happiness*: includes all kinds of happiness except illicit sex *if* clearly stated or implied that the illicit sex experience makes person feel guilty, unhappy, or anxious.

In addition to numerical scores which were obtained for each S under the two conditions, as outlined above, each numerical score was also expressed as a proportion by dividing the numerical score by the total number of words in S's three stories from which the numerical score was obtained.

RESULTS AND DISCUSSION

Results for male and female Ss are combined, since the Sign-Rank Test of differences showed no significant sex differences in scores except a significantly larger number of manifest sex words for males. Table I reveals that story length increased with criticism, the difference between the means of total numbers of words with and with-

TABLE I—Mean Numerical and Proportional Scores for Three TAT Stories with and without Criticism

(N = 19)

Type of Score	Numerical score M without criticism	M with criticism	r	t	Score as a proportion of total number of words *p* without criticism	*p* with criticism	t
Total words.............	280	432	.86**	3.90**			
Aggressive words.....	9.2	15.1	.07	2.25*	.033	.035	.26
Depressed words.....	15.5	23.0	.73**	2.78*	.055	.053	.38
Manifest sex............	6.0	10.7	.50*	2.47*	.021	.025	.89
Symbolic sex...........	9.3	17.2	.68**	5.61**	.033	.040	1.45
Optimistic words....	8.3	17.6	.61**	3.78**	.030	.041	2.00

* Significant at better than .05 level.
** Significant at better than .01 level.

out criticism being significant at better than the 1% level. This confirms the first hypothesis, that criticism significantly increases length of TAT stories.

The number of aggressive words also increased significantly with criticism, while the proportion of aggressive words did not (see Table I), which confirms the second hypothesis. At the same time, each of the four other numerical scores, namely, depressed words, manifest sex words, symbolic sex themas, and optimistic words, also increased significantly with criticism, while none of the proportional scores did so. From these results one might conclude that increase in aggressive words with criticism, as well as increase in the four other numerical scores, is a function of increased length of TAT stories with criticism. Further analysis of the data, however, reveals that this is not true and that hypothesis 3 is incorrect.

Table II shows that the only score which does not correlate significantly with story length is number of aggressive words under conditions of criticism. Further proof that increase in aggressive words with criticism is not a function of increased story length, as increases in the other four scores apparently are, is seen in Table I. Here the correlation between scores with and without criticism is significant in every case, including total numbers of words, except in the case of aggressive words, in which case the correlation is .07. Both lines of evidence, therefore, reveal the same picture and substantiate the conclusion that, while increases in depressed words, manifest sex words, symbolic sex themas, and optimistic words in the present experiment are a function of increased length of TAT stories with criticism, increase in number of aggressive words is actually due to projection of increased aggression which was experimentally produced by criticism.

TABLE II—Correlations between Total Words and Five Numerical Scores for Three TAT Stories with and without Criticism

(N = 19)

Type of score	Without criticism	With criticism
Aggressive words	.66**	.38
Depressed words	.68**	.84**
Manifest sex	.64**	.66**
Symbolic sex	.79**	.92**
Optimistic words	.67**	.92**

*Significant at better than .05 level.
**Significant at better than .01 level.

Results of the present experiment, then, confirm the situational validity of the TAT, despite the fact that the proportion of aggressive words in relation to total number of words was not significantly increased by experimentally induced aggression. This does not, of course, solve the more pressing problem of general TAT validity, which concerns sensitivity of the TAT to enduring personal characteristics. Lindzey and Herman (13) feel, however, that " . . . it is reassuring to find that the test [TAT] is demonstrably sensitive to situational or temporary fluctuations, for this increases the plausibility of our expectation that the test is sensitive to similar enduring characteristics" (13, p. 39).

Another conclusion which seems justified on the basis of present results is that length of TAT stories is often an important factor in their interpretation. This is clearly seen in the results of the present experiment, where criticism is followed by a significant increase, not only in aggressive phantasy, but also in depressed, sexual (both manifest and symbolic), and optimistic phantasy in TAT stories. Most striking is the fact that the increase in optimistic words is actually more significant than the increase in aggressive words (see Table I). If the important factor of story length were ignored, it is easy to see how the results of the present experiment might be ludicrously interpreted as evidence that criticism induces happiness or optimism which is projected into TAT phantasy. When any type of words, themas, or other units (6, 7, 8) is used in scoring, length of stories becomes a vital factor because the longer the story, the better its chances of receiving a high score. When rating scales are used (9, 11, 17, 18), frequency as well as intensity of affect (or sometimes frequency as an index of intensity of affect) is ordinarily used in assigning ratings to TAT stories. With this type of scoring, too, the longer the story, the better its chances of receiving a high rating. Caution is therefore urged in applying any method of scoring to unusually short or unusually long TAT stories. Particular care is needed in working with abnormal populations, especially when their TAT performances are to be compared with those of normals, since Dana (6) found that story length for five TAT stories significantly differentiated a normal (M = 595.8) from a clinical population of neurotics (M = 431.6) and psychotics (M = 420.1). Range of numbers of words also showed a systematic trend, increasing from 350-1025 for normals, to 225-1195 for neurotics and to 165-1445 for psychotics (6). This raises the question of whether, in a study such as that of Gluck (9), wide variations in length of stories by 30 psychiatric Ss could account for the lack of relationship found between amount of hostility in six TAT stories and degree of overt hostility or aggression under stress.

It may be that a relatively short time limit, such as that used in measuring n Achievement (15, 16) and n Affiliation (1, 19), with TAT stories written, will be a sufficient control of length for group experimental work with normal adult Ss (12). McClelland et al. (16) feel that they have succeeded in adequately dividing their male college population only into high and low achievement groups, or at most, into high, middle, and low achievement groups (15, p. 406). In individual predictive work, however, especially diagnostic clinical work, and in work with other than normal adult populations (children, psychotics, neurotics, mentally deficient, etc.) short time limits are obviously inappropriate because they offer an additional handicap to the already difficult task of securing productive phantasy. It may be concluded that in scoring TAT stories, some method of taking into account the length of stories is desirable, and under certain circumstances, is a necessity.

SUMMARY

An experiment was performed to determine whether increase in number of aggressive words in TAT stories following experimentally produced increased aggression through criticism is due to increased story length. It was found that story length did increase significantly with criticism, as did five other scores: numbers of aggressive, depressed, manifest sex, and optimistic words and symbolic sex themas. When these five scores were expressed as proportions of total words, however, there were no significant increases from no-criticism to criticism conditions. All scores correlated significantly with story length except number of aggres-

sive words under conditions of criticism. Each score under no-criticism conditions correlated significantly with the same score under criticism conditions except number of aggressive words. It was concluded that, while increases in the other four scores were a function of increased story length with criticism, increase in number of aggressive words was due to projection of experimentally induced aggression, thus substantiating the situational validity of the TAT.

REFERENCES

1. Atkinson, J. W., Heyns, R. W., & Veroff, J. The effects of experimental arousal of the affiliation motive on thematic apperception. *J. abnorm. soc. Psychol.*, 1954, *49*, 405-410.

2. Atkinson, J. W., & McClelland, D. C. The projective expression of needs: II. The effect of different intensities of the hunger drive on thematic apperception. *J. exp. Psychol.*, 1948, *38*, 643-658.

3. Bellak, L. The concept of projection, an experimental investigation and study of the concept. *Psychiat.*, 1944, *7*, 353-370.

4. Clark, R. A. The effects of sexual motivation on phantasy. In D. C. McClelland (Ed.), *Studies in motivation*. New York: Appleton-Century-Crofts, 1955. Pp. 44-57.

5. Crafts, L. W., Schneirla, R. C., Robinson, Elsa E., & Gilbert, R. W. *Recent experiments in psychology*. (2nd ed.) New York: McGraw-Hill, 1950.

6. Dana, R. H. Clinical diagnosis and objective TAT scoring. *J. abnorm. soc. Psychol.*, 1955, *50*, 19-24.

7. Dana, R. H. Cross validation of objective TAT scoring. *J. consult. Psychol.*, 1956, *20*, 33-36.

8. Fine, R. Manual for scoring scheme for verbal projective techniques (TAT, MAPS, stories and the like.) *J. proj. Tech.*, 1955, *19*, 310-316.

9. Gluck, M. R. The relationship between hostility in the TAT and behavioral hostility. *J. proj. Tech.*, 1955, *19*, 21-26.

10. Light, B. H. Comparative study of a series of TAT and CAT cards. *J. clin. Psychol.*, 1954, *10*, 179-181.

11. Lindner, H. Sexual responsiveness to perceptual tests in a group of sexual offenders. *J. Pers.*, 1953, *21*, 364-374.

12. Lindzey, G., & Heinemann, Shirley H. Thematic Apperception Test: individual and group administration. *J. Pers.*, 1955, *24*, 34-55.

13. Lindzey, G., & Herman, P. S. Thematic Apperception Test: a note on reliability and situational validity. *J. proj. Tech.*, 1955, *19*, 36-42.

14. Lubin, N. M. The effect of color in the TAT on productions of mentally retarded subjects. *Amer. J. ment. Defic.*, 1955, *60*, 366-370.

15. McClelland, D. C. Measuring motivation in phantasy: the achievement motive. In D. C. McClelland (Ed.), *Studies in motivation*. New York: Appleton-Century-Crofts, 1955, Pp. 401-413.

16. McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.

17. Milam, J. R. Examiner influences on TAT stories. *J. proj. Tech.*, 1954, *18*, 221-226.

18. Mussen, P. H., & Scodel, A. The effects of sexual stimulation under varying conditions on TAT sexual responsiveness. brief report. *J. consult. Psychol.*, 1955, *19*, 90.

19. Shipley, T. E., Jr. & Veroff, J. A projective measure of need for affiliation. *J. exp. Psychol.*, 1952, *43*, 349-356.

Received November 25, 1958

The Blacky Pictures as Personality Measures for Undergraduate Areas of Specialization

MAX G. MAGNUSSEN
Veterans Administration Hospital, Cincinnati, Ohio
and University of Kentucky Northern Center, Covington, Kentucky

The stimulus for this research was a study by Teevan (7) that concluded that correlations between personality and vocation discovered by Roe (5, 6) and Knapp and Goodrich (4) for professional groups can also be demonstrated during the period of undergraduate field of specialization. Teevan used the Blacky Pictures as his diagnostic instrument and administered the test in a group setting. He mentioned in the article that there were two deviations from the standard procedure: " (a) up to 15 seconds longer than the standard two minutes were allowed on the spontaneous stories; (b) the inquiry questions, rather than being flashed on the screen one at a time with a time limit for each question, were printed at the bottom of each page. Ss were instructed not to glance at them until told to. An observational check and questioning at the end of the session showed good observance of these instructions." He failed to specifically report the deviations in clinical procedure of: (1) projecting the test stimuli on a screen, and (2) the examination being administered in a group.

The purpose of Teevan's experiment was to determine whether or not personality factors are correlated with choice of a major field in college. Three broad groupings of literature, social science, and science majors were compared on scores derived from the Blacky Pictures and several significant differences were found between these groups. The results were interpreted to demonstrate that correlations between personality and vocational groups can be found during the period preceding entrance into a profession.

This study attempted to utilize the Blacky Pictures as the personality measure in a more orthodox manner of administration and to determine if the results perviously reported by Teevan could be reproduced.

PROCEDURE

The Blacky Pictures (2) were individually administered to sixty male students from the University of Kentucky (Lexington campus and Northern Kentucky Extension Center). The subjects (Ss) ranged in age from 19 to 23 years. The major fields were divided into the same divisions used by Teevan, with twenty Ss from each of the academic areas of specialization. Division 1 (categorized as literature) was comprised of students (N=20) from the English department. Division 2 (classified as social sciences) contained students (N=20) from majors in government, economics, and history; and Division 3 (labeled science specialty) was composed of students (N=20) majoring in biology, geology, chemistry, and physics. In an effort to obtain Ss that were seriously involved in their educational field, only students who had achieved a B plus grade average in the area of concentration were used.

RESULTS AND DISCUSSION

The results of the present investigation are summarized in Tables I and II. The findings are presented in a manner that will permit direct comparison with the reported results of Teevan (7). Table I presents the significance of the differences between the three divisions when Blacky Picture disturbance scores are correlated with choice of major undergraduate specialty.

Table II shows the percentages of the students in the three divisions that gave disturbed and neutral responses

TABLE I—The Relationship Between Blacky Picture Disturbance Scores and Choice of Major Field

Blacky Picture Category	P	Ranking of Division by degree of Blacky Disturbance Scores: Most	Middle	Least
Oral Eroticism	.05	1	2	3
Oral Sadism	.05	2	1	3
Anal Expulsiveness	NS			
Anal Retentiveness	NS			
Oedipal Intensity	NS			
Masturbation Guilt	NS			
Castration Anxiety	NS			
Identification Process	NS			
Sibling Rivalry	NS			
Guilt Feelings	.06	2	1	3
Ego Ideal	NS			
Narcissistic Love Object	NS			
Anaclitic Love Object	NS			

Code: Division 1. — English; Division 2. — government, history, economics;
Division 3. — biology, chemistry, physics, geology
NS=Not significant at .05 level.

TABLE II—Percentage of Each Division Showing Disturbed and Neutral Responses to Blacky Picture Dimensions

Blacky Picture Dimensions	Division 1 Literature	Division 2 Social Sciences	Division 3 Sciences
Oral Eroticism			
Disturbed	52	43	15
Neutral	48	57	85
Oral Sadism			
Disturbed	47	57	11
Neutral	53	43	89
Guilt Feelings			
Disturbed	48	58	28
Neutral	52	42	72

to the Blacky Picture dimensions which yielded statistically significant differences between the groups.

Table I reveals that the first division (English) was the highest of the three groups on Oral Eroticism. These findings corroborate Teevan's results, but with a lower degree (.05 as compared to .01 level) of statistical confidence. In addition, the findings are again consistent with Bergler's (1) observations of 36 people with literary abilities undergoing psychoanalysis and conclusions that writers are fixated at the oral erotic level. These results are also in agreement with Boyd's (3) findings of more disturbance at the oral erotic level in children that are good readers than in slow or retarded readers. Therefore, the current data from the Blacky Pictures are in accordance with the aforementioned investigator's categorization of literary persons as being essentially passive and dependent.

The second or social sciences division (government, history, economics) was highest on the other category that showed significant differences and the one category that closely approximated the .05 level of statistical significance. Oral sadism is purportedly related to aggression toward the mother; Guilt Feelings, as another dimension, is contingent on the introjection of parental standards. Teevan's "neat" constellation of a common element — emphasis on the mother, as reflected through Oral Sadism, Oedipal Intensity, and Anaclitic Love Objects was not found in its entirety. Only the Oral Sadism as aggression toward the mother (Blacky Picture #2) and the Guilt Feelings (.06

level of confidence) which might be consistently placed into the pattern are found to be significant differences.

Finally, Division 3, or the sciences (biology, chemistry, physics, geology) has the lowest disturbance score of the three divisions on most of the Blacky Picture categories. This finding is again consistent with Teevan's results and permits a conclusion that undergraduate males that migrate toward this division are less disturbed in psychosexual development than those who major in the other fields of specialization appraised in this experiment.

For those so inclined, the data present material for interesting clinical speculation and "hypothesizing" concerning personality development for various people in specific undergraduate areas of specialization. The results are fairly clear-cut and the present author is content to deal entirely with the obvious findings.

SUMMARY AND CONCLUSIONS

The present study attempted to determine whether the Blacky Pictures were adequate measures to appraise personality factors which had previously been found to be correlated with choice of undergraduate fields of specialization in college. The Blacky Pictures were individually administered to three categories of college majors consisting of twenty Ss in each grouping. Teevan's results (7) were replicated in respect to:

1. The literature division showing higher Blacky Picture disturbance scores on Oral Eroticism than the other two divisions.

2. The Social Science division revealing higher disturbance scores on Oral Sadism and nearly significant differences on Guilt Feelings. Teevan's findings regarding Oedipal Intensity and Anaclitic Love Object were not found to be significantly different in this particular sample of sixty University of Kentucky students. Teevan had the advantage of a larger N (eighty-five males) which might account for these differences in results.

3. The Science division exhibiting the lowest disturbance scores on practically all categories.

It is concluded that the Blacky Pictures are fairly adequate measures for appraising personality variables as these factors are related to undergraduate field of specialization. In addition, Teevan's results are generally reproducible and the current findings seem to lend further credence to the view that in early stages of academic specialization, particular individuals migrate to specific college majors because of personality factors within themselves. Teevan's group administration of the Blacky Pictures appears to afford benefits of a savings in time and loses little, if any, information which might be gained through individual administration of the test. This seems to be especially true if only the objective, scorable data are being considered.

REFERENCES

1. Bergler, E. *The writer and psychoanalysis.* New York: Doubleday, 1950.

2. Blum, G. S. A study of the psychoanalytic theory of psychosexual development. *Genet. Psychol. Monogr.*, 1949, *39*, 3-99.

3. Boyd, R. D. Reading retardation as related to personality factors of children and their parents. Unpublished doctor's thesis, Univer. of Michigan, 1953.

4. Knapp, R. H., & Goodrich, H. *Origins of American scientists.* Chicago: Univer. Chicago Press, 1952.

5. Roe, Anne. A Rorschach study of a group of scientists and technicians. *J. consult. Psychol.*, 1946, *10*, 317-327.

6. Roe, Anne. Psychological examinations of eminent biologists. *J. consult. Psychol.*, 1950, *13*, 225-246.

7. Teevan, R. C. Personality correlates of undergraduate field of specialization. *J. consult. Psychol.*, 1954, *18*, 212-214.

Received November 24, 1958

Sexual Identification in Responses to Rorschach Card III

MARVEN O. NELSON, WILLIAM WOLFSON AND RALPH LOCASCIO
Middletown State Hospital, Middletown, N.Y.

A number of writers in the field of Rorschach research have suggested that responses to Card III of the Rorschach may be used to gain an understanding of the sex identification of the subject taking the test. (1, 2, 3, 4) The implication of these suggestions seems to be that the blot on Card III lends itself equally well to the perception of human forms of either male or female sex.

The present study is an attempt to test the hypothesis that Card III can be perceived equally well as either male or female human figures by subjects taking the test.

METHOD

Subjects: The data used in the study were obtained: (1) From the files of Rorschach protocols obtained from 159 males and 110 females registered at the Middletown State Homeopathic Hospital as regular patients or as referrals for psychiatric examination; and (2) from protocols obtained from 32 males and 52 females who were not hospital patients. This second group was mainly composed of persons who had applied for admission to the State Hospital School of Nursing, employees of the State Hospital, and a limited number of persons from nearby colleges and communities. Another group (3) was composed of 21 hospitalized and non-hospitalized persons who were known to have engaged in overt homosexual behavior. All protocols used in this study were selected from a larger collection of protocols on the basis of clear designation of human form as a response to Card III. Only those giving the human form response during the free association period of the test were used. The subjects from whom the protocols were obtained ranged in age from 10 years to 79 years, with 92 per cent of them between the ages of 18 and 50.

Procedure: The Rorschach protocols were obtained from the patient group as a part of their psychodiagnostic examination. A number of the non-patient group were given Rorschach tests as a part of the examination requirements for admission to Nursing School, and others were volunteers tested as a part of a research project.

Treatment of data: The subjects were divided into the following groups: Male non-patients (N=32), female non-patients (N=52), male patients (N=159), female patients (N=110), and male homosexuals (N=21). The chi square technique was used to test the significance of the distribution of responses within each group and to compare the various groups in regard to their differences in distribution of responses.

RESULTS AND DISCUSSION

The frequency distributions of responses are shown in Table I, along with the percentages as indicated. It should be noted that the percentage of those giving a "neutral" response (that is, those designating the human figure without indicating the sex) ranged from 28.57% in the case of the homosexual males to 50% in the case of the females. In all groups, the percentage of those designating "male" were greater than those designating "female". Among the homosexual males, however, the responses were almost equally divided between the "male" and "female" designations. The female patients showed the highest percentage of any of the groups in the preference for the designation of "male".

The chi-square analysis of the data

TABLE I. Human Figure Responses to Rorschach Card III Designated as "Male", "Female", or "Neutral"* by 347 Subjects.

Group	Responses						
	"Male"		"Female"		"Neutral"		Total
	N	%	N	%	N	%	N
Male Non-patients	12	37.5	6	18.7	14	43.8	32
Female Non-patients	19	36.5	8	15.4	25	48.1	52
Male Patients	61	38.4	31	19.5	67	42.1	159
Female Patients	47	42.72	8	7.3	55	50.0	110
Homosexual Males	8	38.1	7	33.33	6	28.57	21

*"Neutral" refers to those human figure responses where sex was not designated.

TABLE II. Chi Square Analysis of "Male" - "Female" Responses Showing the Significance of Distributions Within Each Group and Differences Between Groups.

Group	Compared with:				
	M	F	MP	FP	HM
Males (M)	2.00				
Females (F)	.0679	4.16*			
Male Patients (MP)	.0004	.167	9.78**		
Female Patients (FP)	3.241	2.545	7.66**	26.981**	
Homosexual Patients (HM)	.465	.958	.656	4.500*	.62

* Significant at 5% level of confidence
**Significant at 1% level of confidence

TABLE III. Chi Square Analysis of Combined "Male-Female" Responses and "Neutral" Responses Showing the Significance of Distributions Within Each Group and the Differences Between the Groups.

Group	Compared with:				
	M	F	MP	FP	HM
Males (M)	.50				
Females (F)	.129	.076			
Male Patients (MP)	.026	1.6016	3.954*		
Female Patients (FP)	.610	2.637	1.734	0.00	
Homosexual Males (HM)	1.341	2.233	1.366	3.013	3.841*

*Significant at the 5% level of confidence.

is shown in Tables II and III. Examination of the data in Table II reveals the following differences at the 5% level of confidence or above:

1. Female non-patients tended to designate "male" more often than "female".

2. Male patients tended to designate "male" more often than "female".

3. Female patients showed a stronger tendency to designate "male" than did any of the male groups.

Examination of the data in Table III shows the following differences at the 5% level of confidence or above:

1. More male patients designated the sex of the human forms seen on Card III than the number who gave "neutral" responses by leaving the figures with sex undesignated.

2. The homosexual male group gave sex designated responses more often than neutral responses.

CONCLUSION

The results of this study did not confirm the hypothesis that the Rorschach Card III blot can be perceived equally well as either male or female human forms. On the contrary, it suggested that, for all groups tested, the blot was more often seen as "male" or "neutral" than as "female". This was most evident in the female patient group.

The limited number of subjects in the non-patient male and the homosexual male groups suggests further study of these groups would be desirable.

REFERENCES

1. Due, F. O. and Wright, M. E. The use of content analysis in Rorschach interpretation: I. Differential characteristics of male homosexuals. *Rorschach Res. Exch.*, 1945, *9*, 169-177.

2. Klopfer, B.; Ainsworth, Mary D.; Klopfer, W. G. and Holt, R. *Developments in the Rorschach technique. Vol. I.* Yonkers-on-Hudson, World Book Co., 1954. Pp. 332, 392.

3. Lindner, R. M. Analysis of Rorschach test by content. *J. Clin. Psychopathol.*, 1947, *8*, 707-719.

4. Wheeler, W. M. An analysis of Rorschach indices of male homosexuality. *J. proj. Tech.*, 1949, *13*, 97-126.

Received October 16, 1958

The Experimental Induction of the Defense Mechanism of Projection[1]

ROBERT ROSENTHAL[2]
University of California at Los Angeles

Since Freud first defined projection as "the ego thrusting forth onto the external world whatever gives rise to pain internally" (12 v. 4, p. 78), the concept has generalized to such an extent that today almost any idiosyncratic perceptual behavior runs the risk of being labelled projection. Bellak probably perceived this when he worriedly agreed with Sears that projection was the most inadequately defined term in all psychoanalytic theory (3). Actually it would seem that a good many writers define projection rather carefully and adequately (1, 3, 7, 15, 30, 31, 32, 35), but many of us generate confusion by our varying usages of the term. The process whereby the concept of projection has picked up all its surplus meaning is discussed in more detail elsewhere (24).

Considering the importance of the concept, relatively little controlled research has been carried out on projection. Fabian (9), Rokeach (23), Sears (28), Zucker (36), and Norman and Ainsworth (20) defined projection operationally and except for Rokeach did find evidence for the operation of projection. Before accepting the conclusions of these investigators, it seems essential to review exactly what they did to see if we can be satisfied that it was indeed projection they were investigating. The basic designs of these studies were enough alike so that a general model may be constructed. A questionnaire purporting to measure various traits is filled out by a group of people all of whom know each other. Each person fills out the questionnaire once for himself and also once for every other person in the group according to how he feels that other person would fill in the questionnaire. Projection is said to occur when a person rates himself low on a trait on which others rate him as higher, and rates others higher on that trait than they rate themselves. Thus projection is defined by a discrepancy score. This is an operational definition and one cannot question the legitimacy of an operational definition —it is self-contained. One can, however, question the usefulness or appropriateness of any given operational definition. In these studies, because of the emphasis which the pathological features of projection have received, most of the traits investigated were undesirable ones. These undesirable traits may consciously or unconsciously have been denied by a large percentage of the subjects so that an empathic person correctly ascribing these traits to another would be likely to be accused of projection where he actually showed empathy. In this type of study everything hinges on knowing whether a person "really" has a given trait or not. Through ratings or through tests this is a difficult question to answer.

Perhaps a more important difficulty of these studies is that they in effect end by considering projection as a trait of which one can have more or less depending on the size of the discrepancy score. A trait is a *static* entity, but projection is widely thought to be a *process* (3, 12, 32). The definitions of projection referred to earlier imply this in no uncertain terms. Thus Freud speaks of "the ego thrusting," Bellak of "the ascription of feelings," and Symonds of "the reference of impulses." These are all active, process terms rather than static, trait terms. We may thus conclude that as far as these controlled observations are concerned the *process* of projection has been at best touched upon but by no means demonstrated to occur.

---

[1] This study is based on a portion of a dissertation submitted in partial fulfillment of the requirements for the Ph.D. degree at the University of California at Los Angeles. I wish to express my appreciation to my committee and especially to Drs. Bruno Klopfer and J. A. Gengerelli for their valuable advice and assistance.

[2] Now at the University of North Dakota. I want to thank Dr. Hermann F. Buegel for his reading of the manuscript.

We may review briefly those investigations wherein an attempt was made to actually induce projection. Murray's classic study (19) showed that children who were frightened perceived photographs as more malicious than they did before their fear experience. While writers on the subject of projection have often quoted this study as evidence for the phenomenon, Murray himself considered this phenomenon to be "complementary apperceptive projection" rather than projection itself. Bellak (3) and Rodnick and Klebanoff (22) found that in response to criticism of story-telling and motor ability there was an increase in themes of aggression on the TAT. They cite this as evidence of projection insofar as the S's aggression was "projected" onto the TAT cards. Since Bellak defines projection as "the ascription of feelings and qualities of one's own to other people . . . " (3, p. 354) his finding might have been more direct and telling had he found that criticized Ss perceived more criticized figures on the TAT. Nevertheless, these studies are the ones which yield the most suggestive evidence to date for the existence of the process of projection.

In scrutinizing carefully the literature on projection it would seem most appropriate to demonstrate the process of projection by inducing it. If we can induce it, we not only have evidence for its occurrence, but we are also assured that it will remain a process, in our thinking, instead of being viewed as a static trait-like entity.

It might be well here to restate Symonds' definition of projection as the "reference of impulses, thoughts, feelings, and wishes originating in the person himself to persons and objects in the outside world" (32, p. 296). For experimental purposes it is necessary to limit this definition somewhat since impulses, feelings, wishes, and thoughts would be too awkward to investigate simultaneously. Evidence for the occurrence of the process of projection will be considered to have been advanced if known feelings can be induced in persons who can be made to show that they refer these experimentally induced feelings to others.

Sears (29, p. 235) has said: "Perhaps not the most compelling, but certainly the most pervasive of all socially determined rewards are those leading to feelings of success or failure." Since it was felt that this would be especially true for college freshmen, it was decided to choose the feelings of success and feelings of failure as those to be induced in the experimental Ss.

METHOD

Subjects

One hundred and eight subjects were divided into three groups. There were thirty-six male paranoid-diagnosed patients from a neuropsychiatric hospital, thirty-six male students and thirty-six female students all enrolled in first year psychology classes. The ordinary objection to highly selective sampling due to using volunteers was not operative since the patients were requested by their physicians to participate and the college Ss were obliged to serve time as research Ss as part of their course requirements (5). The mean age of the patient group was 36.0 years and their mean Shipley-Hartford I.Q. 110.3 (118.3 when only vocabulary I.Q. was used). The mean age of college men was 20.1 and of college women 18.4. Thus while the three groups were roughly equated for I.Q. the patient group ran about seventeen years older than the mean of the college Ss. The paranoid group, primarily paranoid-schizophrenics were selected by their physicians on the following criteria: 1) that they be of at least average intelligence, 2) that they be in sufficient touch with the world to be able to understand moderately difficult instructions, and 3) that they be clearly and typically paranoid. All the physicians contributing Ss included "projection" as one of their chief criteria of a paranoid disturbance. Paranoids were included since so much of the literature links this specific disorder with the defense mechanism of projection carried to pathological extremes (18, 25, 31). In addition, if any group of psychotic patients, especially schizophrenics, are to be included in a study with college students, it seems most appropriate to use paranoid patients since these tend to be more nearly of the same order of intellectual functioning. In general, too, paranoids are more like normals than are the other schizophrenic nosologies (16, 17, 21).

College women comprised a separate group in view of Schilder's (27) analysis of the different meaning of success and failure to men and women in our culture. In addition, Zucker's work suggests a sex difference in the projecting process (36).

Materials

The Photo Card Sets. The stimulus materials upon which the Ss were to project their feelings were photographs of men's and women's faces cut from advertisements in a weekly news magazine. They ranged in size from 30 x 46 mm. to about 42 x 68 mm. and were mounted on 3 x 5 inch white cards in such a way that most Ss thought they were photos taken solely for the purposes of this study. Twenty-eight of the most ambiguous photo cards were assigned to one of two sets of fourteen each. The sets were "matched" by the method of random assignment (8). Each subject rated one set of photo cards before and one set after the experimental treatment thus serving as his own control.

The Rating Scale. On a rating scale running from —10 to +10 subjects were asked to rate the face on each photo card according to the degree of success or failure they felt was expressed by that face. A —10 rating was made when the S felt the face was of a person who had just been informed of a very severe failure in some important unspecified task. A +10 rating was made when the S felt the face was of a person who had just been informed of a very extreme success in some important unspecified task. A —1 rating was made when the S felt the face was of a person who had just been informed of a very mild failure. A +1 rating was made when the S felt the face was of a person who had just been informed of a very mild success. All other numbers occupied intermediate positions between —10 and —1 if negative and between +1 and +10 if positive.

The "Intelligence Test." In view of the paranoid's frequent preoccupation with intellectual matters and the college student's necessary preoccupation with these, it was felt that strong feelings might easily be aroused in all Ss in connection with performance on an intelligence test. Two pseudo-intelligence tests were constructed which resembled some of Wechsler's sub-tests (24, 34). One of the tests was analogous to Block Design while the other was very roughly analogous to Object Assembly.

Experimental Design

Experimental Treatment. The overall design of the experiment was to determine whether the S's experience of either success or failure on the "intelligence test" influences his ratings of success and failure on the photo cards. Each of the three groups of subjects; the patients, the college men, and the college women, were further subdivided into three experimental treatment groups: a success group, a failure group and a neutral (control) group. The failure group was included because it is widely felt that unpleasant feelings are projected. It is thus the primary experimental group which on the basis of the literature should show the projection process most clearly. The success group was included because of a few writers' (28, 32, 33) assertions that there is a "projection of desirable and good" feelings and impulses onto other people as well as a "projection of the bad" (32, p. 297).

The success and failure groups were read the same initial instructions (24). They were told that the purpose of the study was to see if there was any relationship between "empathy" and "intelligence." Insofar as could be determined no subject suspected the true intent of the experiment. The success and failure subjects were then shown how to make their ratings of the photo cards and told that they would afterwards take an intelligence test based on "the best intelligence test we use in psychology today." Instructions to the neutral group include no mention of an intelligence test. Throughout the four items which comprised the "intelligence test" the "success" S was allowed to finish and was warmly complimented. The "failure" S, however, was not permitted to finish any item and the E's remarks became increasingly solicitous, e.g., "Perhaps we should try an easier one."

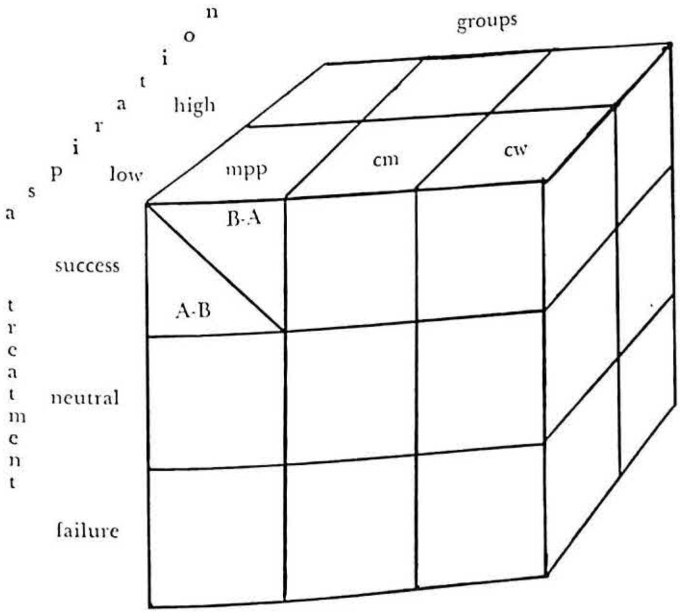
After having undergone the success or failure treatment, the S took another "empathy" test wherein he rated the other matched set of fourteen photo cards. If the hypothesis of projection were correct we would expect the failure group to see more failure on the second rating than on the first. In terms of the ratings assigned each photo card this would mean that the S assigned a lower algebraic number to the photo presented after failure. We may call this change in rating a shift score. The shift score is positive in sign if more success is seen after treatment and negative in sign if more failuse is seen after treatment. If the hypothesis of the "projection of the good" were correct we would expect the success group to see more success on the second rating than on the first. The neutral S, instead of taking an "intelligence test," was permitted to read the school paper between the first and second ratings. Presumably the neutral group's second ratings should not differ significantly from their first ratings. Before leaving this section it must be pointed out that in order to avoid any harmful psychological effects of the failure Ss without giving away the intent of the experiment, an extension of the experimental design became necessary. All failure Ss were given the "success" treatment after their second ratings and told that only their best performance would "count." Thus, while many failure Ss were quite upset by the failure treatment, none of them remained disturbed after their subsequent success experience.

Level of Aspiration. Although it was felt that success and failure on an intelligence test would represent an emotionally "real" experience for the Ss, the possibility still existed that some or all of the Ss would remain uninvolved (13, 14). To this end, all Ss were given the Cassell Group Level of Aspiration Test (6). Frank and others (2, 6, 10, 11, 26) point out that ego involvement is related to a high level of aspiration and that this level of aspiration is a fairly global characteristic of a person. Thus a high aspirer would be expected to have a greater negative reaction to the experience of failure. In terms of the experiment, then, even if we found no projection by any of the treatment groups, we might nevertheless find that those Ss who had a high level of aspiration did show projection. We would then be in a position to state that although projection was not generally induced, it *was* induced in those cases where the S was ego-involved and cared about his success or failure. This in itself would be considered appropriate evidence for the occurrence of projection. Accordingly, each of the three groups of subjects: the paranoid patients, the college men and the college women were divided into high aspiring Ss and low aspiring Ss. In each group the eighteen Ss scoring highest on the level of aspiration measure became the "high aspirers" and the eighteen low scorers became the "low aspirers."

The Factorial Design. To summarize, three groups of Ss were each subdivided into three experimental treatment groups and each of the resulting nine groups were then divided into high and low aspiration levels. This 3 x 3 x 2 factorial design is illustrated in Figure 1. Since it was not possible to be certain whether the two photo sets of the "empathy" test were really identical, half of the subjects in each of the eighteen cubicles rated photo card set A first while the other half rated photo card set B first. This counterbalancing of photo card set presentation was designed to cancel out any differences due solely to the difference in photo card sets A and B. This of course expanded the factorial design to a 3 x 3 x 2 x 2. It will be remembered that the data going into each cubicle are shift scores. For example, a before-treatment rating of +2 and an after-treatment rating of +6 yields a shift score of +4. A before-treatment rating of −6 and an after-treatment rating of −2 also yields a shift score of +4.

RESULTS

The analysis of variance based on the shift scores from the first to the second "empathy" test indicates whether any changes have occurred which might be attributed to treatment, to group (or nosology) and to the two levels of aspiration. The eighteen cubicles formed by the three groups, three treatments and two levels of aspiration yield variance estimates based on three main effects, three simple interactions and one triple interaction. Since each cubicle was divided into two semi-cubicles differing in order of photo card set presentation, the within cubicle variance was broken down into within semi-cubicle variance. There were four within cubicle sources of variance: (a) "persons within semi-cubicles," was the variance due to individual differences; (b) "card order within semi-cubicles" was the variance due to the fact that the fourteen cards of each photo set



Key

mpp – male paranoid patients
cm – college men
cw – college women
A-B – photo card set order
B-A – photo card set order

FIGURE 1 — Diagram of 3x3x2x2 Factorial Design

TABLE I—Analysis of Variance Based on Pre-Posttreatment Shift Scores

Source of Variance	*df*	Mean Square	Significant *Fs*
Aspiration	1	0.76	
Treatment	2	3.78	
Groups	2	1.01	
Asp. x Treat.	2	32.26	
Asp. x Groups	2	7.43	
Treat. x Groups	4	16.00	
Asp. x Treat. x Groups	4	38.18	
Persons within semi-cubicles	72	31.01	
Card order within semi-cubicles	468	46.48	1.60*
Interaction card order x person	936	29.17	(Error term)
Residual	18	197.97	
Total	1511		

* Significant at the .01 level

differed from each other and from the fourteen cards in the other photo set; (c) "interaction between persons and card order within a semi-cubicle" was the variance due to the differing cards and card sets' differential effects on individuals. Since this source of variance was the variance left after the known sources of within cubicle variance were removed (persons within semi-cubicles and card order within semi-cubicles), it was used as the error term.[3] (d) A residual variance representing the interaction between the order of photo card presentation and the differing semi-cubicles remained as an additional source of within cubicle variance. Table I shows the results of the analysis. None of the among cubicle sources of variance showed a significant F. Only the "card order within semi-cubicles" source of variance was significant. Our conclusion thus must be that by the experimental design employed projection was not demonstrated to occur. In addition it must be concluded that the difference between the two photo sets in amount of shift was markedly significant.

DISCUSSION

In this type of personality research, there is always the possibility that the S's knowledge that he is participating in an experiment makes it difficult to elicit responses (e.g. projection) which are typically thought to occur in "real" situations posing a threat to the ego. Thus the simple knowledge of his being in an experiment may be enough to serve as a kind of antidote to experimentally induced stresses. This conceivable failure to ego-involve the Ss may account for the experimental failure to demonstrate the occurrence of the projection process. In addition to this more general possibility there appear to be three others more specific to this experiment which might account for this negative finding.

The first of these is that the experiment may have in some way been inappropriate to the problem at hand. Thus it may have been unrealistic at this stage of our knowledge in this area to attempt a precision of technique which may have been inconsistent with the precision of our backlog of empirical information from which hypotheses must be derived. The second possibility is that the definition of projection must remain, for a time at least, a "sensitizing concept" as Blumer has used this notion (4). That is, the clinician knows what he means when he uses the term and feels reasonably sure that his communicants hold roughly the same sensitization to the concept. Under this view it would be held that until we learn more about projection there is little use in trying to define it further. This is indeed a possibility but, it is felt here, a remote one. It appears more likely that by increasing the precision of our concepts we are put into a better position to gain empirical information about them. The first of the possibilities accounting for this failure to induce the projection process is a question of experiment while the second is a question of conceptual clarification. The possibility that these two objections may not account for the negative findings leads us to the possibility that the process of projection may not occur as different writers have formally defined this concept. It may be then, that the reason for this concept's having gathered so much surplus meaning is chiefly that we just do not find the simple, uncluttered, clearly defined process in operation. Thus, in addition to our continuing clinical observations of the process of projection it would seem worth while to continue experimental attacks upon the problem in the hopes that we can clarify the process and perhaps specify the conditions under which it is likely to occur.

---

[3] For working out many of the difficulties in this rather complex statistical treatment I am extremely grateful to Prof. J. A. Gengerelli.

SUMMARY

The purpose of this experiment was to test the hypothesis of projection, operationally defined, by a direct attempt to induce the process. Accordingly, 108 Ss composed of 36 hospitalized paranoid patients, 36 college men, and 36 college women were further divided into three sub-groups receiving success, failure, or neutral experience on an "intelligence test." The nine subgroups thus formed were further divided into high and low aspiring Ss within each sub-group, thus yielding an 18 cubicle factorial design. Data were based on shift or difference scores between an S's pretreatment ratings of photos as more or less successful or more or less unsuccessful, and posttreatment ratings. It was postulated that if the hypothesis of projection as defined by Bellak, Symonds, and others were tenable, the success group should see (rate) more success after treatment; and the failure group should see (rate) more failure after treatment when both groups are compared to the neutral (control) group. Paranoid patients were included among the Ss since the literature suggests that they are more prone to project. College women were included because of data suggesting sex differences in projection. High aspirers were hypothesized to become more ego-involved with an intelligence test experience and thus perhaps show the process of projection more clearly. The analysis of variance showed none of the among cubicle sources of variance to be significant. Thus there was no support for the hypothesis of projection as defined by Bellak, Symonds and others within the data of this experiment. Possible explanations for this finding were discussed.

REFERENCES

1. Allport, G. W. *Personality, a psychological interpretation.* New York: Holt, 1938.

2. Bayton, J. A., & Whyte, Esther. Personality dynamics during success-failure sequences. *J. abnorm. soc. Psychol.*, 1950, *45*, 197-200.

3. Bellak, L. The concept of projection, an experimental investigation and study of the concept. *Psychiat.*, 1944, *7*, 353-370.

4. Blumer, H. *Sensitizing concepts.* Paper read at Amer. Sociol. Soc., Berkeley, Aug., 1953.

5. Brower, D. The role of incentive in psychological research. *J. gen. Psychol.*, 1948, *39*, 145-147.

6. Cassell, R. N. *Manual: the Cassell group level of aspiration test.* Beverly Hills: Western Psychological Services, 1952.

7. Coleman, J. C. *Abnormal psychology and modern life.* Chicago: Scott, Foresman & Co., 1950.

8. Edwards, A. L. *Statistical analysis for students in psychology and education.* New York: Rinehart, 1946.

9. Fabian, W. A., Jr. An investigation of the relationship between measures of insight and measures of projection and distortions in ratings. *Dissert. Abstr.*, 1954, *14*, Part I. 711. (Abstract)

10. Frank, J. D. Individual differences in certain aspects of the level of aspiration. *Amer. J. Psychol.*, 1935, *47*, 119-128.

11. Frank, J. D. Some psychological determinants of the level of aspiration. *Amer. J. Psychol.*, 1935, *47*, 285-293.

12. Freud, S. *Collected Papers.* London: Hogarth, 1953, Vols. 3, 4.

13. Hilgard, E. R. Success in relation to level of aspiration. *Sch. & Soc.*, 1942, *55*, 423-428.

14. Hoppe, F. Erfolg & Miserfolg. *Psychol. Forsch.*, 1930, *14*, 1-62. (under) Lewin, K. *Untersuchungen zur Handlungs-und Affektpsychologie, IX.*

15. Ichheiser, G. Projection and the mote-beam mechanism. *J. abnorm. soc. Psychol.*, 1947, *42*, 131-133.

16. Miller, D. R. Pathological reactions to threat of failure. *Amer. Psychologist*, 1949, *4*, 274. (Abstract)

17. Miller, D. R. Reponses of psychiatric patients to threat of failure. *J. abnorm. soc. Psychol.*, 1951, *46*, 378-387.

18. Murray, H. A. *Explorations in personality.* New York: Oxford Press, 1938, Ch. 4.

19. Murray, H. A. The effect of fear upon

estimates of the maliciousness of other personalities. *J. soc. Psychol.*, 1933, *4*, 310-329.

20. Norman, R. D. & Ainsworth, Patricia. The relationships among projection, empathy, reality and adjustment, operationally defined. *J. consult. Psychol.*, 1954, *18*, 53-58.

21. Rickers-Ovsiankina, Maria. Studies of the personality structure of schizophrenic individuals: I. the accessibility of schizophrenics to environmental influences. *J. gen. Psychol.*, 1937, *16*, 153-178.

22. Rodnick, E. H. & Klebanoff, S. G. Projective reactions to induced frustration as a measure of social adjustment. *Psychol. Bull.*, 1942, *39*, 489.

23. Rokeach, M. Studies in beauty, II. some determiners of the perception of beauty in women. *J. soc. Psychol.*, 1945, *22*, 155-169.

24. Rosenthal, R. An attempt at the experimental induction of the defense mechanism of projection. Unpublished doctoral dissertation, Univ. of California at Los Angeles, 1956.

25. Rosenzweig, S. An outline of frustration theory. In Hunt, J. M. (Ed.) *Personality and the behavior disorders*. New York: Ronald Press, 1944, Vol. I, Ch. 11, 379-388.

26. Rotter, J. B. Level of aspiration as a method of studying personality, III: group validity studies. *Charact. & Pers.*, 1943, *11*, 255-274.

27. Schilder, P. Success and failure. *Psychoanal. Rev.*, 1942, *29*, 353-372.

28. Sears, R. R. Experimental studies of projection: I. attribution of traits. *J. soc. Psychol.*, 1936, *7*, 151-163.

29. Sears, R. R. Success and failure: a study of motility. In McNemar and Merrill (Ed.) *Studies in personality*. New York: McGraw-Hill, 1942, 235-258.

30. Sears, R. R. Survey of objective studies of psychoanalytic concepts. *Soc. Sci. Res. Council Bull.*, 1943, No. 51.

31. Slotkin, J. S. Culture and psychopathology. *J. abnorm. soc. Psychol.*, 1955, *51*, 269-275.

32. Symonds, P. M. *The dynamics of human adjustment*. New York: Appleton, 1946.

33. Van Lennep, D. J. The four picture test. In Anderson, H. H. & Anderson, Gladys. *An introduction to projective techniques*. New York: Prentice-Hall, 1951.

34. Wechsler, D. *The measurement of adult intelligence*. Baltimore, Williams & Wilkins, 1944.

35. Weiss, E. Projection, extrajection, and objectivation. *Psychoanal. Quart.*, 1947, *16*, 357-377.

36. Zucker, K. B. An experimental investigation of correlates of projection. Unpublished masters dissertation, Western Reserve Univ., 1952.

Received December 7, 1958

The Integration of Determinants and Content in Rorschach Interpretation[1]

DAVID SHAPIRO
Austen Riggs Center

1.

First of all, I would like to state my understanding of the question that is presented to us at this symposium on *"The Relative Importance of Determinants and Content in Rorschach Interpretation."* I assume that by "importance," simple empirical validity is *not* meant. That would be a perfectly legitimate question—by which method of interpretation one could obtain the best predictability in a given situation. But I am not sure how much would be learned from that question, just because I am convinced that no really decisive answer could be obtained, that the answer would vary depending on the variable to be predicted and also on the skill and the direction of interest of the predictors. If the question were to be simply concerned with matters of everyday, practical importance, I think it would be easier to argue for the greater importance of determinants, and for a very simple reason: the Rorschach happens to be an instrument the design of which is directed toward indicating certain formal elements of individual perceptual tendencies rather than elucidating verbal content. This is its unique contribution and its historical significance, and although it is theoretically possible that an instrument designed for one purpose would later turn out to perform, with optimal efficiency, another purpose, this would be essentially an unlikely coincidence.

However, I assume that the question is a different one. Namely, is there a difference in the importance of these two factors which is intrinsic to them and to the Rorschach test; are there theoretical reasons why, ultimately even if not at present, one approach is likely to reveal decisively more of what we are interested in than the other? This is the question that, it seems to me, must be answered negatively. I hope that my position will not be taken for fence-straddling on this matter, because my argument essentially is for a different point of view, namely that each of these—determinant and content interpretation — is absolutely indispensible to optimal understanding of the other, and that the question of "relative importance" therefore cannot be answered one way or another for good reasons. What I will present to you could hardly be called a rationale for this position. It is only a fragmentary sketch of the reasons for a point of view which, however, I have found absolutely necessary in clinical work.

2.

What we obtain in a Rorschach response or a Rorschach protocol are essentially final, external products of internal processes. It is in the nature of such final external products, and especially those that reflect, as the Rorschach protocol does, highly complex internal processes, that they have in one particular sense a certain ambiguity. I mean by this simply that there is no one to one correspondence between a given final product and a specific inner process. This is not to question the determinism of such final products, such as an expressed thought or a piece of behavior, but only to say that the product itself does not necessarily reflect the processes that preceded it in any unique way. While I think this is one of the central problems of diagnostic work in general, it is also a commonplace, and it is very easy to illustrate:

---

[1] Originally presented at the symposium on "The Relative Importance of Determinants and Content in Rorschach Interpretation" sponsored by the New York Society for Projective Techniques, May 17, 1958.

Imagine that you walk along the street and hear a man singing to himself a popular, romantic love song. You listen carefully to his words; what do they tell you? As carefully as you may listen, the words will not tell you whether he is in love or isn't in love, whether he is happy or sad, whether he is rehearsing a tune for an audition he is about to have or whether he really means, literally, what he is saying. Any of these internal processes and many more might have resulted in this external product, and his words will not reveal which. In fact, if one would direct attention too closely to the content of the song, that very fact might well preclude any clear impression at all of the man's actual mood and interest.

Consider another example. Suppose one is waiting outside a telephone booth and notices that the man who is using the phone is talking in a very excited, rapid, almost hysterical manner. Perhaps the impression is of someone who is making a call which concerns some family emergency. But it might equally well be someone, with quite different feelings, trying hard to make a last minute plane reservation, or even someone telling a friend about a piece of very exciting and happy news. It is likely in this case that knowing the exact content of the man's speech would establish one or another of those possibilities as the actual fact. Such knowledge, of course, would then allow a fresh and more insightful examination of the man's excited manner.

It seems to me that this fact that a given, final external product and in particular a single dimension of such a product need not necessarily reveal in a unique way the internal processes that precede and cause it is the *general* fact that argues against weighing the importance of one dimension of the Rorschach against another. It seems that the Rorschach is such an excellent instrument *just because* it provides a number of dimensions, of which, incidentally, the determinants and the ideational content are only two of the major ones.

3.

I would like to make some points now concerning the nature of the Rorschach response and the processes behind it.

The final Rorschach image, the fully conscious and externalized or expressed Rorschach response is, in a way of speaking, not just the product of associative and perceptual operations or even of the interplay between them. That is, it is not merely a result. It is the terminal point of a process, but it is in itself, an integrative operation. The nature of, and the success or failure of, this integration is as we all know one critical factor in any interpretation. It is so clear that the integration of ideational content and the visual-perceptual factors is the task in the Rorschach and that the task is neither simply perceptual nor simply associative, that when this integration fails, for example, in failure of sufficient associative distance from or elaboration of the visual impression, as in color-naming, or in an incapacity to bind associative trends sufficiently to visual factors, we do not hesitate to consider this a reflection of serious pathology, or, in some cases, we may rule this out altogether as a response proper.

Nor do I believe it can be said, as I understand the so-called projective hypothesis to say, that the integration which constitutes the Rorschach task is only a *compromise* between associative trends and external visual requirements. Here again, I think that if in a Rorschach protocol one actually gets an impression of such a *compromise* between internal associative pressures and external, visual requirements, one marks it down as a less than adequate integration, as a response of less than good form-level, for example, and considers it to that extent a failure.

The visual qualities of the ink blots are not ordinarily a restriction on associative processes and a factor with which one compromises. The ink blot qualities are, within that situation, the vehicle of associative processes, their medium, and the perceptual organizing tendencies that are brought to bear on these visual qualities may be compared with a syntax without which these associative processes cannot be expressed. As with any expressive medium or syntax, this one — the visual qualities available together with the organizing tendencies brought into play–shapes and lends its stamp to the content which is expressed through it.[2] Thus, one cannot view Rorschach imagery as if, for example, it were dream imagery any more than one can view dream imagery as if it were waking daydream imagery, or that as if it were ordinary day to day discourse or conversation. It is in the nature of human equipment to see things, to organize visual experience, to coordinate it with memory, interest, knowledge and such, and the ideational content that appears in such circumstances cannot be most profitably viewed except as coordinated with that actual visual experience. Those who work intensively with the Rorschach appreciate this fact intuitively. It is more or less built into many aspects of our approach to the Rorschach protocol, and it is built into our recognition as pathological of any incapacity to satisfy the ordinary standards of such coordination between visual and ideational factors. Naturally, this is not to say that ideational content or mode of expression in the Rorschach situation is unrelated to ideation which appears in other contexts, that a great deal may not be learned about one from the study of another, or that certain principles or individual modes of organization may not be common to all.

The Rorschach, in addition to its ideational aspect, allows for a high degree of individual inclination or personal style in perceptual organization. We know of course that the individual perceptual style which we see in a Rorschach protcool, or rather than speak of a single perceptual style, the organization of a variety of styles and tendencies which may express themselves in a protocol, reflects broader modes of expression and of character organization. The recent experimental work in individual perceptual and cognitive styles, for example of Klein and his associates, is after all in its outlook not new to us. For us, *the formal characteristics of the Rorschach, including particularly the determinants, are the data with which we arrive at an understanding of individual perceptual style and organization.* The determinants have this meaning or none at all.

It could be argued with some justification that the determinants have not always clearly and explicitly had this meaning in the past. The various determinants have been attached, with a greater or lesser degree of empirical validity, to a hodgepodge of human traits which seem impossible to systematize. Color attached to affect as though the color itself actually contained some affect deposit and with insufficient understanding of the perceptual processes through which such a relationship may, or may not, be established; shading attached to anxiety; FM to impulses of some sort; M to empathy; and so on. In spite of this state of affairs, we still must assume that the determinants fundamentally have their meaning as reflecting formal aspects of perceptual style and organization, and that their further interpretive or indicator-meaning must ultimately be understood in that sense.

Just as content gets its sense and its tone through the medium and style of its expression, so the expressive style is unthinkable without content. It is, again, the whole sense and direction of visual and perceptual equipment to see *things*, and the nature of the things which are seen, the quality of the things that are of interest, in other words, the visual content, will give the perceptual style its final and definite shape. To use an analogy which is not too distant from our interest, one cannot be simply compulsive, or depressive, or repressive. Compulsiveness can exist only with a content of action or ideas, and the nature of these actions and ideas which means, also, the nature of the material available for them, will determine the final form of compulsive tendency.

---

[2] For a demonstration of this point, Werner and Kaplan's (1) work on expression in line drawings is valuable.

4.

My aim is not to convince you that you should rely just equally on content and on determinant interpretation in Rorschach work. It seems to me that perfectly legitimate differences of interest, natural inclination or background will tend to cause each one to give more weight to one side than to the other. Also, there is no doubt that there are differences in this respect among different Rorschach protocols; some, quite legitimately I think, seem to call for more emphasis on content interpretation and others on determinant interpretation. The aim here is, rather, to show that there is no reason intrinsic to the test to consider one aspect more important than the other, and, in addition, to show that each aspect can be properly understood only in the light of the other.

I would like to illustrate this, not exhaustively, but with certain problems which I think are common or typical ones. I will take two sorts of problems for this purpose: 1) the problem of levels or the problem of reference in content interpretation; and 2) the problem of specificity in interpretation which relies on determinants primarily.

Let me give an example in order to clarify the meaning of this problem of levels or problem of reference in content interpretation. We are all familiar with certain Rorschachs in which there is a steady current of sado-masochistic imagery. This imagery, for instance, may include such themes as tearing, cutting, beating, kneeling, or other themes suggestive of sadistic action, humiliation, or the like. There are several interesting problems in connection with the interpretation of a content theme such as this, but for the time being we will consider only one. The action-mode suggested by this content, namely sadism, has a certain ambiguity, and it retains this ambiguity no matter how precisely, by tracing the content theme throughout the protocol, one is able to delineate its details. The ambiguity may be described in several ways. It may be described as an ambiguity as to subject and object—on which end of the sadistic action does the person who gives the response feel himself to be? Or one can put the same question in a different way and ask, is the action with which the response-giver is primarily identified a sadistic or a masochistic action?

It might be said that this supposed ambiguity is only apparent, and that a great deal of clinical experience as well as certain theoretical considerations make it very clear that the apparent ambiguity is only an expression of the fact that these two positions—subject and object, or these two interests, sadistic and masochistic—are always and without fail present together within an individual. Essentially this is true, but it only sharpens the problem and makes it more clearly a problem of levels, for the fact remains that there are individuals for whom the sadistic mode is by far closer to conscious attitude and behavior, others for whom the masochistic mode is closer to conscious attitude and behavior, and perhaps a third group who may in fact be characterized primarily by vacillation in attitude and behavior between the two positions depending on specific circumstances. The question is, how do we choose among these possibilities on the basis of Rorschach content.

The crux of this problem of levels, you will notice, is this: the imagery content, the fantasy or memory or interest elements that are utilized in the construction of the Rorschach image or the response content are, or at least may be, exactly the same in all these cases. What one does not know, and what one may very well have, from the content dimension alone, a difficult time finding out, is the exact relationship of this imagery to the person who gave it, its sense and meaning to him, or the mood and attitudes from which it emerges. Thus, the meaning and the value of this content interpretation remains seriously limited, in the illustration, to speaking only of a general sado-masochistic mode, until one can answer these questions.

Where will the answer come from? It will come most often, I think, from an understanding of the formal qualities of perceptual organization that appear in the same Rorschach. The way in which the visual material is shaped and handled is another aspect or dimension of the responses whose imagery content one has been examining, and this other dimension will ordinarily give clues to the answers one needs, that is, to the prevailing attitudes and orientation in the context of which the imagery has its full meaning.

I cannot present here a case interpretation, but I would like to describe what I mean more specifically. The same content imagery—cutting, beating, etc.—will sound different and will mean something different in a Rorschach with a large number of responses, with a great predominance of pure form responses of excellent form level, with little or no color or only color that is decisively subordinated to form, different in such a record from what it will mean in a record of few responses, of proportionately fewer pure form responses and those of a gross, more careless quality, with a large number of color-dominated responses and the immediate and passive relationship to the stimulus that those tend to imply. What is being suggested here, of course, is an active, forceful, penetrating perceptual style, on the one hand, and a more passive, giving-one's-self-over to the visual material on the other. The same imagery content may appear in these two widely different contexts, but it will have different meaning in each.

This is only one of a large number of such problems of level. Phobic and counter-phobic issues contain somewhat similar problems. Broader dimensions such as masculinity-femininity and aggression-passivity will also need to be considered in the same light.

Take another type of problem that, again, for the sake of convenience, may be called a problem of levels. A 35-year-old man gave the following response to the usual area of card VII:

> "They look like two old, gossipy women. I noticed the dark shading (in their faces)—it looks like somebody has thrown blueberry pies in their faces, like in the old slapstick comedies."

It does not take much ingenuity to detect an aggressive aspect to this response. And in fact, this man's Rorschach contained a number of other responses similarly marked by aggressive imagery. We will assume now, which is quite justified in the circumstances, that these responses reflect an active and aggressive interest more than a subjective feeling of being passively aggressed upon. Assuming this, what do we learn from this sort of content and what do we *not* learn? It is again a fact of the type that I suggested in my analogies at the beginning that identical aggressive imagery, of this sort for instance, may be given on the one hand by individuals who would not hesitate a moment to *act* aggressively, physically, and on the other hand by individuals who would never seriously consider such action. Not that these latter individuals are necessarily sweet Pollyannas—if that were the case, they probably would not give much imagery of this sort in the first place. But there are individuals, for example those characterized by what is called isolation of affect, whose predominant mode is in fact an active and in a sense aggressive one, and who are quite capable of entertaining on a certain level a good deal of aggressive imagery, but whose *attitude* toward that imagery is quite detached. This man, for example, was a lawyer, who was not tested as a patient and in whom there was no outstanding evidence of pathology. The response content was, as far as he was concerned, a little joke. The formal Rorschach picture, the determinants, in this case were quite typical of compulsive people; the form level was impeccable. It is true that this sort of imagery reflected a somewhat lofty and condescending, possibly teasing attitude toward women on the part of the subject. But that is quite a different story from raw aggression. One must conclude that content elements such as these which may in themselves be identical would mean very different things in this man's Rorschach and in another characterized, for instance, by one or two pure C's, unsteady form level, and such. The content elements would have a different setting, would be drawn from a different level, so to speak, in the organization of thoughts or fantasies or memories.

I am not at all sure that the problems which might be called problems of content reference are essentially very different from the problems I have just indicated. These problems of content reference revolve around several facts, the first of which is that many images, though not necessarily ambiguous or esoteric, may have such a variety of connotations that the interpreter, unless he is satisfied to be arbitrary, is mystified about their specific connotation on a given occasion.

Take the simple response "waiter" to card III. Is this an image with oral connotation, or with a connotation of servility and status, or one of formality and restraint, or some other? It is true that many times these questions can be answered by study of other content or of general content themes. But not always.

For example, there may be a general content theme around images of flowers and exotic decorations; does this have a connotation of artistic taste and sensitivity, or one of compulsive and precious pseudo-esthetic interest, or one simply of sensuousness? The formal qualities of the perceptual style may, again, give some clue as to the actual connotation for the subject or may at least limit the range of possibilities, and therefore contribute to the content interpretation which is most valid.

Or consider another example, this time a young man's Rorschach in which there was great emphasis on images of food, more so than I recall having ever seen elsewhere. One might think that the connotation of food is clear enough. Perhaps in a camp of hungry or half-starved people it would be. But in our milieu, though it *can have* connotations of oral or passive craving, it can also have connotations of stubborn negativism, or sensuous indulgence, or many others. This record, formally, was a poorly controlled one, rather wild and reckless in form and in color-use, but at the same time with many responses that bespoke a kind of narcissistic self-confidence through all the reckless and impulsive judgments. I would say that the connotation of food, to this subject, was much more one of indulgence, a spoiled-child's tyrannizing demandingness, than the depressive or lonely cravings it may sometimes suggest.

The point may be summarized by saying that the real meaning of content is largely dependent on the kind of thought organization from which it is drawn, the subjective attitude towards it, and the personal connotations which it may have. But the establishment of these facts, and therefore the most adequate content interpretation, will usually require an understanding of the quality of the perceptual organizing tendencies through which this content has gained expression.

5.

What about the use of content for determinant interpretation? I think that here it is necessary to distinguish two types of problems, one involving practical problems which derive from the limitations of our present knowledge techniques, and the other involving problems more intrinsic to our material.

In speaking of the first type of problem, I have in mind the types and categories in which we classify or differentiate the formal qualities of perception, in other words, our scores. These simply are too gross for our needs, and the various traits which they are said to reflect, even if in that respect they are perfectly accurate, are likewise not nearly specific enough. High form level, low form level, pure color, form-dominated color or, control, affect, impulsiveness, and such—these dimensions, as significant as they are, are simply in themselves insufficiently specific. At least they are insufficient if one wants to go beyond more or less gross diagnostic evaluations in test work.

But there is a more important and perhaps more interesting issue involved, namely, is it in the nature of purely formal modes, such as the perceptual modes which are represented for our purposes here by the determinants, ever to have the degree and kind of specificity which we require in our work? Or to put the question another way, can we look forward to the day when purely formal interpretation will be sufficiently specific. My own belief is that we cannot. I have already suggested what seems to me the essential reason for this; that is, that, limiting ourselves for the present to speaking of formal modes of *perception,* these modes come into being or are manifest only with some sort of ideational content, and it is in fact this content which crystallizes their final and specific shape.

What does this mean concretely? We can find some illustrations in connection with the use of the color-determinant.

Consider three color responses, or, let us assume, pure color responses: blood, spilled (colored) ink, and urine stains. If these three responses are all scored pure C, then by definition within our present scheme of describing these formal qualities of perception, the three responses are not distinguishable from one another. It is not that I doubt that they are different; I am sure that they are different, not only in content but in the formal quality of the perception. But these are differences which may very well not be detectable, and in this particular case are certainly not detectable, on the basis of the formal score alone. Why should this be so? Essentially, I believe, the answer is not in an insufficiency of our scoring systems, but rather because in the final moment, when the perceptual tendency is integrated with ideational content, it receives its essentially unique quality and stamp which may, to one degree or another, be special to that moment and to that content. And the quality and tone of the content is the obvious clue to the final shape which the broad perceptual tendency has at that moment taken.

In my experience, the "blood" response is most typically found in hysterical people where it seems to have the connotation of high pressure of affect, the "spilled ink" response is found often in impulsive, narcissistic character disorders who, as far as affect in the ordinary sense is concerned, tend to be rather cool and even bland, and the "urine stain" in chronic schizophrenics where the same formal score and broad perceptual mode reflects a severe and pervasive blandness. I have very little doubt, myself, that the color at that moment of response *looks* different to subjects in each of these three categories. But the key to how it looks, to the *exact* sense and quality of the perceptual mode at that moment, will not necessarily come from the formal score. Nor would it solve the problem fundamentally if we had finer, more highly differentiated scores for these responses. That might be helpful, but no imaginable number of divisions could approach the number of *specific* qualities and tones which the broad perceptual mode is capable of taking in final expression. Ultimately the best clue to how the visual stimuli are perceived at the moment of response will come from the specific content of the response.

Any number of other examples, and many striking ones, are easy to come by among color responses. How else, if not by the whole tone and sense of the content, could one get a clue to the vivid, compelling sensory quality of a response such as this one given by an acutely paranoid psychotic boy to the center red area of card III:

> "Like bright headlights on a car—like when you're on a beach at night and a car points its headlights at you."

Or the different quality of vividness in a hypomanic woman's response to all of card IX: "An orgasm in color."

Determinants — major categories of formal perceptual qualities — tell us something in these cases. But the fact is, again, that it is simply not in the nature of these categories to delineate with sufficient sharpness the visual and perceptual operations which can be of value to us in understanding the specific condition of the subject.

Examples could, of course, be multiplied with other determinants. In connection with the form determinant, for example, we already include in our scoring one attempt to specify the perceptual tendency more sharply by reference to the adequacy of integration of visual and content factors. I am referring to form level scoring. And additional gains in sharper specification are made in scoring, for example, "vague form" separately. The advantages of such finer form scoring are parallel to the advantages of scoring "deterioration color" separately, and all such attempts necessarily consider aspects of content or integration of content and visual quality in their attempts to delineate the formal perceptual style more finely. These distinctions are always valuable, and there will be room for finer scoring differentiations of this sort up to the point where the scoring system will be too cumbersome. But at the same time, it will be well to recognize the fundamental quality of these problems and to recognize that adding scoring differentiations here and there will never enable us to obtain as adequate a view of the special perceptual tendency at the moment of response as will, often, the content of the specific image that has become the final and externalized shape of that tendency.

6.

I am well aware that I am not saying anything new to experienced Rorschach workers. I believe in fact that the method and approach that I have been describing is one of the operations implied in the term "clinical intuition" as applied to Rorschach interpretation. But it is of value to make such operations explicit as far as we can. For one thing, they can throw additional light on such a question as the one we are discussing today; perhaps secondly, they may lay to rest some of the experimental research methods which tally up contents or determinants as though each and every time these had the same subjective meaning; and finally, they may suggest a more rigorous clinical application of this approach. I think that it may be just because the content dimension used in the way I have described is sometimes overlooked, that formal, determinant interpretation tends to be too gross in its descriptions and tends to lack a sharpness that gives a sense of conviction that a real human being is described. On the other hand, I expect that it is inadequate use of the formal, or determinant, dimension that causes content interpretation to be, in my opinion, almost always sharply detailed, but often incorrect.

I would like to make one final point. When we work actively with at least two dimensions of a production in this way, there is a special additional gain: we have a built-in criterion of adequacy. From this point of view, any Rorschach interpretation is less than adequate if it does not succeed in an integration of every formal and every content aspect, and as long as *one* is not clear in the light of the *other,* we know that there is something missing. I would not say that this approach guarantees correctness, but I think it makes correctness much more likely than any other method.

REFERENCE

1. Werner, H. and Kaplan, B. "Experimental Studies on Symbolization," Lecture at Austen Riggs Center, March, 1958.

Received December 16, 1958

BOOK REVIEWS

Mira Y Lopez, Emilio, Myokinetic Psychodiagnosis, New York: Logos Press. 1958. (Translated from the French by Mrs. Jacques Dubois.)

This book, originally published in French in 1951 has been translated under the editorship of Leopold Bellak, Michael H. P. Finn, Leonard Small and Frances Bishop. It is a manual for the use of the Myokinetic Psychodiagnostic technique which is an unstructured graphomotor approach to the investigation of personality characteristics. Six sets of simple line figures are to be reproduced by the subject under varying conditions. Both hands are used for the drawings. For the main portions of his responses the subject is not permitted to see the movements he is making but must depend on kinesthesis. A special test booklet and a special table permitting controlled tilting are required.

The test is based on the now familiar concept that bodily movements reflect personality characteristics. The use of both hands provides an opportunity to make comparisons based on the belief that "The dominant hand is expected to show more ego expression in that it exercises more practical control; the weaker hand, lacking the same degree of voluntary corrective control, is looked upon for more instinctive unconscious expressions." There are brief comments about the interpretation of the graphic responses. These are based on linear and chronological measurement as well as some special pattern variations. Intelligence, depression and euphoria, intrapsychic coherence (integratedness) excitation and inhibition, anxiety and apathy, aggressiveness, introversion and extroversion are among the areas dealt with. There are also suggestions for use of the instrument for diagnostic differentiation. Some normative tables are provided based on populations other than those of the United States. Some statistical evidence of reliability and validity are included.

As the editors point out, in its present form the technique is too cumbersome for the practicing psychologist but certainly provides an intriguing opportunity for research. There has been a great deal of research outside this country but little here. Although there are other graphomotor approaches such as that by Gehl and Kutash, Rapkin, and others, Mira's organized approach, using both hands for the comparative purposes he does, is a distinctive one that merits further consideration by psychology in the United States. However, the instructions both for administration and interpretation are extremely meagre and at many points difficult to follow. At this time, as implied by the editors, the translation of the manual has its greatest value as a stimulant to those who would do research in the area of graphomotor expression.

Mortimer M. Meyer
Los Angeles

W. J. Revers, *Der Thematische Apperzeptionstest (TAT).* Hans Huber; Bern and Stuttgart, 1958. 209 pp.

This is an elementary text on the TAT by a German psychologist. After the introduction, there is a description of the test, application and administration, including a supplementary interview and a discussion of various methods of diagnosis using the TAT. He concludes with a section on unresolved problems, and one on the psychocathartic side-effects (Nebenwirkung) of the TAT.

For American psychologists the book is of interest solely for comparative purposes. It contains no new material, and recommends some procedures, such as using the TAT to stimulate psychotherapeutic discussions, which most psychologists here would consider to be at least of questionable value.

Almost all the literature cited is from American sources. However, he has relied mainly on published books and relatively little on journal articles.

Inasmuch as a number of stories and protocols are cited from German sources, these could be used for comparison with stories from other countries by anyone interested in the "culture-bound" aspects of the TAT.

The book is Vol. 2 in the Encyclopedia of Psychology in Individual Presentations, a Hans Huber series. Vol. 1 is a translation of Gordon Allport's "Becoming."

Reuben Fine

GENERAL NEWSLETTER

Alvarez Villar, A. & Narros Martin, G. La percepcion visual en las diversas entidades nosologicas psiquiatricas. *Revista de Psicologia general y aplicada*, 1958, *13*, 739-766.

A perceptual test, the Progressive Matrices and the Rorschach were administered to several diagnostic groups. Empirical findings and theoretical points are presented.

Schachter, M. Psicodiagnostico, con el test de Rorschach, del caracter oposicionista e inestable. *Archivos de Criminologia, Neuro-Psiquiatria y Disciplinas Conexas*, 1959, *7*, 14-21.

The author describes two Rorschach variables which he finds characteristic of the protocols of unstable and oppositional personalities.

Porteous, Hedy S. Enuresis: the symptom and the character structure. Its relationship to the oedipal conflict. *A Crianca Portuguesa*, 1958, *17*, 665-681.

The psychoanalytic theory of enuresis is documented with a discussion of drawings.

Dabrowski, K. La desintegration mentale comme facteur positif dans le developpement emotionel de l'enfant. *A Crainca Portuguesa*, 1958, *17*, 731-736.

Indications of positive features among signs of disintegration in children are discussed and related to the Rorschach.

Menano, Cecilia. Importance du travail colletif dans le dessin et dans la peinture libres. *A Crianca Portuguesa*, 1958, *17*, 809-810.

A brief report on the use of children's group participation in creating designs and paintings.

dos Santos, J. & Menano, Cecilia. L'acquisition de la forme dans les dessin et dans la peinture enfantines. *A Crianca Portuguesa*, 1958, *17*, 811-813.

A description of stages of development in children's free drawing and painting.

Diaz Arnal, Isabel. Valeur diagnostique du dessin des enfants deficients. *A Crainca Portuguesa*, 1958, *17*, 937-938.

Diagnostic clues in children's drawings.

Meili, R. Das Problem der Validation der Methoden der Personlichkeitsuntersuchingen. *Zeitschr. f. diagnost. Psychol.*, 1958, *4*, 283-303.

A theoretical discussion of validity studies and theor implications.

Lucena, J., Borges, J. C. C., Sette, P. E. & Souto, Maria do C. Le Bender Gestalt Test et quelques donnees d'analyses structurales chez des schizophrenes. *Zeitschr. f. diagnost. Psychol.*, 1958, *4*, 313-316.

Significant differences were found on the Bender between acute and chronic schizophrenics.

ANNOUNCEMENTS

TWENTIETH ANNUAL PROGRAM

of the
Society for Projective Techniques
CINCINNATI, OHIO
FRIDAY, SEPTEMBER 4, 1959

9:00 - 10:50 A.M.

Symposium: The Role of Stimulus Structure in Projective Techniques. Dr. Edwin S. Shneidman, Central Research Unit, VA Center, Los Angeles, Chairman.

Participants: Dr. Kenneth B. Little, National Institutes of Mental Health; Dr. Bernard I. Murstein, Univ. of Portland; Dr. Edith Weisskopf-Joelson, Purdue Univ.; Dr. Ira Friedman, Cleveland Psychiatric Institute.

Discussants: Dr. Jerome Kagan, Fels Research Institute; Dr. Joseph Zubin, N.Y. State Dept. of Mental Hygiene.

SATURDAY, SEPTEMBER 5, 1959

11:00 - 12:50 A.M.

Symposium: The Prediction of Overt Behavior Through the Use of Projective Techniques. Dr. Arthur C. Carr, New York Psychiatric Institute, Chairman.

Participants: Dr. William E. Henry, University of Chicago: "The TAT"; Dr. Bertram R. Forer, Los Angeles VA Mental Hygiene Clinic: "Sentence Completion Tests"; Dr. Max Hutt, University of Michigan: "Graphomotor Techniques (Bender-Gestalt Test & Draw-a-Person Test)"; Dr. Zygmunt A. Piotrowski, Jefferson Medical College: "Rorschach Test".

Discussant: Dr. Evelyn Hooker, U.C.L.A.

3:00 - 4:00 P.M.

Business Meeting, Society for Projective Techniques.

4:00 - 5:00 P.M.

Presidential Address, Society for Projective Techniques.

Dr. William E. Henry: Personality Development in Adulthood and Old Age.

5:00 - 6:30 P.M.

Dutch Treat Cocktail Party, Society for Projective Techniques.

APA CONVENTION INTERNATIONAL PROGRAMS

One of the highlights of the 1959 APA Convention in Cincinnati will be a Round Table on "Reciprocal Influences in International Psychology," scheduled for Saturday afternoon, September 5, from 2-4 p.m., in the Ballroom of the Hotel Sinton. Jointly sponsored by APA Divisions 1, 9, and 12, the Round Table will also have representation from the Interamerican Society of Psychology and the Society for Projective Techniques. Participants and their areas of discussion include Drs. Gordon W. Allport (Africa), Eugene L. Geier (Scandinavia), Roger Myers (Canada), Nevitt Sanford (Eastern Europe), and Emanuel Schwartz (Latin America), plus two visiting psychologists from abroad (still to be announced). Dr. Henry P. David is Chairman. Members and guests planning to attend the APA Convention will also be encouraged to participate from the floor.

Immediately following the Round Table, APA will again sponsor an Open Coffee Hour for Visitors From Other Lands in the Crystal Room of the Hotel Sinton. As before, the International Council of Women Psychologists has been asked to arrange hostess service.

MEMBERSHIP DECISIONS

The Society for Projective Techniques is pleased to announce the following membership decisions.

Fellows:

Farberow, Norman L.
Garfield, S. L.
Halpern, Florence
Holtzman, Wayne H.
Horn, Daniel
Kalinkowitz, B. N.
Lazovik, David A.
Lindzey, Gardner
Little, Kenneth B.
Molish, Herman B.
Roe, Anne
Rosenzweig, Saul
Sanford, R. Nevitt
Shapiro, David
Singer, Erwin
Snowden, Robert F.
Stein, Morris I.
Tomkins, Silvan S.
Treat, Wolcott C.

Associates:

Akavia, Uriel
Berliner, Hildegard
David, Charlotte
Ehrenreich, Gerald A.
Fabrikant, Benjamin
Greenberg, Nathan
Haworth, Mary R.
Hoshino, Akira
Isaacs, Mark
Jortner, Sidney
Klein, Louis S.
Liutkus, Stankey
Reens, Renee
Schon, Martha
Scott, Edward
Tada, Harou
Tanaka, Fuzio
Zeev, Bracha

Student Affiliates:

Donoghue, John
Kleban, Morton
Schoenborn, Elizabeth

BOOKS FOR REVIEW

The Executive Editor invites offers to review the following books.

Bass, B. M. & Berg, I. A. (Eds.) *Objective approaches to personality assessment.*

Bellak, L., Ostow, M., Pumpian-Mindlin, E., Stanton, A. H., & Szasz, T. S. *Conceptual and methodological problems in psychoanalysis.*

Caligor, L. *A new approach to figure drawing. (With test materials for the Eight Card Redrawing Test.)*

Delay, J., Pichot, P., Lemperiere, T. & Perse, J. *The Rorschach and the epileptic personality.*

Harrower, Molly. *Personality change and development (As measured by the projective techniques.)*

Orr, Miriam. *Le test de Rorschach et l'imago maternelle.*

Szondi, L., Moser, U. & Webb, M. W. *The Szondi Test in diagnosis, prognosis and treatment.*

ERRATA

Three errors exist in the paper by Arthur B. Silverstein. Identification with same-sex and opposite-sex figures in thematic apperception. J. proj. Tech., 1959, *23*, 73-75.

All errors are in Table 1. The value of *t* for Male Succorance should be 1.59, not 1.61. The value of *r*, Opposite-Sex for Female Dominance should be +.32, not —.32. The value of *t* for Female Dominance (2.61) is significant at the .05 level, and should be starred.

If anyone wishes to dispose of back issues of the Journal, foreign psychologists who lack the funds to purchase them would appreciate receiving them. Specifically, volumes 19 through 21 are missing from the library of Mieczyslaw Choynowski, Pracownia Psychologiczna, Szpital w Kobierzynie, Krakow 18, Poland.

Research Exchange

A Comment on the Wiener-Nichols Controversy (2, 3, 4, 5)

Robert R. Holt
Research Center for Mental Health, New York University

To what a sad pass we have come when we must invoke their putative morale-building value as justification for projective techniques! Of course it is true that a professional person's habitual activities, and the accustomed heft of the tools of his trade, give him the reassurance of familiarity and renew his sense of professional identity and continuity with the past. But these are essentially non-rational considerations, and ones that can hardly play any major role in important decisions, such as whether projective techniques should be abandoned, should be subjected to intensified research, or the like. Doubtless the imposing beard of the Victorian physician was a great comfort to him, but that was not enough to preserve it when it was suspected of being a germ-carrier. Likewise, we have to find much more substantial merits in projective techniques than the non-rational ones cited by Weisskopf-Joelson and Nichols, to justify our keeping them.

This little controversy, which started out with a reasonable proposal by Wiener that we ought to work harder on getting people to agree on interpretations, seems to have been overexpanded by Nichols' rather extreme views. A column like this is hardly the place to debate fundamental issues about projective techniques or to make flat assertions like the two in Nichols' contribution.

Let's stick to the issue, because Wiener's point was a good one but was nearly lost in the hue and cry. Actually, we need to start further back than diagnoses, predictions or other integrative statements; there are entirely too few studies on the reliability of basic scoring. Having been involved in an attempt to devise scoring schemes that would guide clinical judgment in making predictions (1), I'm very much aware of how hard it is to get agreement on scores that require any degree of clinical judgement. Whether to persist through the laborious stages of developing and revising procedures for dealing with projective techniques or turn rather to more and more ingenious, objectively scorable tests is a decision that each of us has to make for himself in relation to a particular problem. For any specific research task, like predicting suitability of persons for an occupational role, it may be that the long-run usefulness and values of what can be developed will repay the effort; for routine diagnostic use, the situation is quite different. It is practically impossible to find objective instruments that will do much for us there, since we're not predicting a finite number of clearly specifiable criteria.

One of the ironic paradoxes in this situation is that the really research-minded people who might be willing to take up issues such as the one Wiener proposes are generally not much interested in devoting their efforts to homely goals like improving the usefulness of clinical techniques. And, on the other hand, the good clinicians who are deeply interested in their instruments and how well they work often don't feel comfortable enough with research methods to do the job, either. Yet sooner or later we have to supplement the oral tradition of working with projective tests by research-derived data and principles.

If I may contribute a personal reflection to this discussion, I'd like to veer off in another direction and defend the proposition that projective techniques and other diagnostic tests are, and most usefully ought to remain, comparable to the interview and the autobiography as sources of clinical data. We hardly need better instruments for gathering data; rather, we need most of all a better conceptual framework in terms of which to conceptualize the richness of these data. Thus, even though I would favor studies of the kind Wiener advocates, I predict that in the long-run we won't make very much progress with projective techniques until we have some major advances in the theory of personality.

REFERENCES

1. Holt, R. R. & Luborsky, L. *Personality patterns of psychiatrists.* New York: Basic Books, 1958. 2 vols.

2. Nichols, R. C. The problem of interjudge agreement and prediction: a contrary view. *J. proj. Tech.*, 1958, *22*, 255-257.

3. Weisskopf-Joelson, Edith. Comments on Nichol's and Wiener's notes on inter-judge agreement and prediction. *J. proj. Tech.*, 1959, *23*, 106.

4. Wiener, M. The problem of interjudge agreement and prediction. *J. proj. Tech.*, 1958, *22*, 122-124.

5. Wiener, M. A rejoinder to the problem of interjudge agreement and prediction. *J. proj. Tech.*, 1959, *23*, 105-106.

SPECIAL BACK VOLUME OFFER

Because of the demand for earlier out-of-print volumes of the Journal of Projective Techniques, a limited number have been reprinted* We are now in a position to make the following specially-priced offer.

Set of ten volumes: 11 through 20 (1947-1956)	$50.00 (Foreign $55.00)
Volumes 11 and 12 combined	$ 6.00 (Foreign $ 6.50)
All later volumes individually	$ 6.00 (Foreign $ 6.50)
Current subscription	$ 8.00 (Foreign $ 8.50)
Monograph No. 1 "Projective Techniques and Psychotherapy" by William Lundin	$1.50 ($1.00 with set)
Monograph No. 2. "Manual for Make-A-Picture-Story (MAPS) Method" by Edwin Shneidman	$2.50 ($2.00 with set)

* The first ten Volumes published in mimeographed form under the title, "Rorschach Research Exchange" are now available in photostatic or microfilm reproduction through National Library of Medicine, 7th St. and Independence Ave., S.W., Washington 25, D. C.

ORDER BLANK

Society for Projective Techniques and Rorschach Institute, Inc.
Adelphi College
Garden City, N. Y.

Enclosed find $__________ for the following order:

______ sets of Volumes 11 through 20 at $50.00 (Foreign $55.00)

______ sets of Volumes 11 and 12 at $6.00 (Foreign $6.50)

Volumes________________ of Volumes 13 through 20 at $6.00 per volume (Foreign $6.50)

______ Monograph No. 1 at $1.50 (with sets of 10 volumes $1.00)

______ Monograph No. 2 at $2.50 (with sets of 10 volumes $2.00)

______ Current subscription $8.00, foreign $8.50.

Name: (Please print) ____________________

Street ____________________

City____________ Zone______ State________

JOURNAL OF PROJECTIVE TECHNIQUES

Vol. 23 December, 1959 No. 4

• • •

EDITOR

Bruno Klopfer

EXECUTIVE EDITOR

Bertram R. Forer

ASSOCIATE EXECUTIVE EDITORS

Walther Joel
Jeanne M. Reitzell
Edwin S. Shneidman

STAFF EDITORS

Evelyn Crumpton
Florence Diamond
Norman L. Farberow
Herman Feifel
Fred J. Goldstein
James Holt
Nicholas Rose
Leonard B. Olinger
John Weir
Irla Lee Zimmerman

CONSULTING EDITORS

John E. Bell
Eugenia Hanfmann
Robert R. Holt
Lois B. Murphy
Maria A. Rickers-Ovsiankina
L. Joseph Stone

Personality Development in Adulthood and Old Age[1]

William E. Henry
University of Chicago
and
Elaine Cumming
New York State Department of Mental Hygiene, Syracuse

It is self-evident to us all that changes in those attributes of persons normally called personality do indeed occur in the years subsequent to early adulthood. Yet the discovery and clarification of the particular nature of these personality events seems to remain a difficult task. This difficulty may stem in part from our general conceptions of personality as a characteristic of persons which shows the most marked changes and development only in the pre-adult years. We are inclined to think, not without some justification, that personality becomes "established"—and by this we seem to mean "fixed"—rather early in life; by five years of age possibly, or by the end of the developmental trials of adolescence, depending upon our theoretical preferences, or upon the particular aspects of personality at which we choose to look. It may also be that we are partially blinded to changes after adulthood by our own middle-age-determined bind to the verities and stabilities of middle class life. In spite of these possible personal or theoretical resistances to the notion of describable personality changes in the later years of adulthood, we all are aware that such changes do occur—at least in other persons.

I should like to call attention first to the possibility of certain conceptions in our views of old age which may lead us to see that age-group more in terms of its similarity to middle-age than in terms of attributes inherent in old-age itself. In review, I will suggest that our conceptions predispose us to use the middle-age status as a model of desirable social and personal development, and hence to see any deviation from this model as negative and undesirable. This may perhaps result in a failure to conceive of old-age as a potential developmental stage in its own right, having features qualitatively different from middle-age.[2]

Our thinking about old age might be described in terms of several themes. The first of these is the theme of middle-age and middle-class bias. Understandably enough, we are inclined to set the standards of behavior of this group as the model for the elderly. It has been noted before that studies dealing with issues of morale and personal adjustment find lower-class persons systematically lower in morale than middle-class persons. We also find ourselves using as indicators of morale for the elderly such questions as "Do you feel useful to those around you?", interpreting the response "No" as an indicator of lowered morale. Feeling useful is certainly an appropriate middle-age virtue, especially to those involved in family life. The implication of higher morale stemming from service to others also appears to be a highly functional middle-class attribute. What remains unclear is whether the older person should and does feel the same bind in this respect as does his younger counterpart.

---

[1] Paper read by William E. Henry as presidential address of the Society for Projective Techniques at the convention of the American Psychological Association, Cincinnati, September, 1959.

[2] The work which I will describe is the result of the research being conducted by the Committee on Human Development of the University of Chicago by a group of persons of which I am only one. This is the Kansas City Study of Adult Life financed by the National Institute of Mental Health. The study is under the direction of Robert J. Havighurst, Bernice L. Neugarten, with myself as Principal Investigator. The Director of the research is Dr. Elaine Cumming. The work on the sociological and social interaction aspects is centrally that of Dr. Cumming, assisted by Dr. Lois Dean and Mr. David Newell. The theory of disengagement, which constitutes the central axis of this paper is the conception of Dr. Cumming and has been presented by her in another section of this Convention. I will focus today on the personality aspects of this project and report work undertaken by Dr. Louis C. Schaw, Dr. David Gutmann, Miss Jacqueline Rosen under the direction of Dr. Bernice Neugarten and myself.

A closely related second theme is the assumption of continual expansiveness. We place considerable emphasis, in our own lives, upon keeping up our activities and contacts. Our presumption is that such continued participation in the events of the social world is also a necessary and desirable condition of adequate adjustment beyond the middle years. Thus we advise the older person to continue to develop new interests and new contacts, to replace such interactions as may disappear through retirement or death of associates. This logic seems entirely sound if we have in mind the development more characteristic of the years before middle age, in which an extension of knowledge, experience, and interaction indeed seems appropriate to the eventual goal of active family and social participation in middle age. When the goal and end-point is, however, death, the model of continued expansiveness seems less appropriate and somehow to ignore the retrenchment and eventual removal from the social nexus of interaction involved in this approaching end-point.

A third theme deals with the quality of interpersonal relations in the later years. We do assume some change in these relations yet appear to expect that the aged continue to desire instrumentality, that competence in the active management of the environment so valued in the middle years. Thus "feeling wanted," as well as "feeling useful" appear to us as desired attributes of the aged. In a society where in the older years being useful to others is not inevitably linked to being adequately cared for, it would seem more logical to anticipate a desire to be valued not for *being* useful, but for *having been* useful, for a history of successful instrumentality.

In this model of active, rich, outgoing, satisfying and useful relations which we appear to hold of older persons, it seems odd that we choose to withhold the assumption of active sexuality. While it is clear that we are ambivalent about whether or not sexuality should or should not be present in the older person, a fourth theme would appear to assume its absence. This is, of course, contrary to Dr. Kinsey's findings, who, while he suggests no marked activity, does clearly indicate that the rate of declining sexuality in those years is a rate no greater than that starting after the peak years of adolescence.

The interaction of these various themes seems to imply that old age is not a state into which we move, a state possibly having its own unique attributes, but rather that it is a period of moving away from some previous and more desirable period—"the prime of life" or the "years of usefulness." From this we can only infer that we see the middle-age state as much preferable to the old-age state, and that to retain indefinitely its features constitutes successful aging.

An alternative model of aging would seem to us to have to take into account the possibility of some attributes qualitatively different from those of the middle years and, in particular, that one special "behavioral" feature of age, the inevitability of death. I should like now to state such an alternative theory—a restatement of a theory of disengagement proposed by Dr. Elaine Cumming and stemming from the Kansas City Study of Adult Life. In overview, we see the aging individual as changing gradually from a state of full engagement with the world around him (middle age) to a state of disengagement from it (old age). This process should have aspects similar to the developmental tasks or focal conflicts of the earlier years, at least in that it may be thought of as occurring typically in several stages. If this proposal is reasonable, we would imagine a series of steps somewhat as follows.

Stage one must involve some changes in the perception of time. It is said that the young person never really believes that he will die. This first stage must bring with it some realization of the mortality of life. The thought must occur that time is not infinite. One characteristic of this changed perception may well be the end of the habit of measuring time from birth on and a tendency now to measure it by the distance from our death. Loss of enthusiasm for some kinds of activities and involvements may be the result of this feeling that time is running out and hence must be apportioned according to some principles — saving money becomes less important than traveling, the time required to paint the living room would be better spent in reading. The hidden agenda come to the fore—agenda put off perhaps during the long years of socialization when we learned how to delay personal gratification in exchange for the accomplishment of something others expected of us. It may be the abandonment of the faith that everything is possible because life is long which constitutes the first step in disengagement.

The second stage of disengagement may be concomitant with the vision of the briefness of life, or it may follow shortly after it. It is a shift in saliency between the inner and the outer world. This may in some take the form of religious concerns. In others it may take the more general form of asking oneself what one really is and has been. In whatever format, it would appear to be a stage in which introspection and the contemplation of the inner thoughts begin to replace concerns with outer world demands.

A sharpening of the sense of the shortness of time may be the third stage. Here the thought "time is finite" becomes "time is running out." One of our respondents reports: "I used to read very rapidly when I had all the time in the world left, but now that I am old, I piece my books out, a little each day." He seems to have attached the passage of time to the reading of books and has so arranged it that his life will last as long as his supply of reading matter. A crucial element of this sense of the ending of time seems to be a redefinition of the self as less bound into the surrounding network of social interaction including an anticipation of being more distant from persons nearby. This is in a sense a practicing of loss through a sense of already being disengaged from immediate relationships.

We believe that this sense of social separation is accompanied by a restructuring of the boundaries of the ego—in particular a reduction in object cathexis. This may occur in both the sense of a constriction of ego boundaries which leaves fewer objects in direct contact with the ego and in the sense of a shift in the order of involvement so as to place a higher priority on some kinds of objects as opposed to others.

We would see both of these effects occurring at the point where the psychic investment turns from outside to inside.

In stage five there occurs an actual curtailment of direct contacts with other people—the movement anticipated in the previous stage. This stage is one in which the number of hours of each day spent with people is reduced, even though the number of categories of associates — friends, colleagues, relatives, neighbors—may remain the same. Contrary to general expectation, we think the older person experiences some rewards, rather than loneliness or despair, in this inward turning. As well as finding pleasure in this re-experiencing of the inner life, the aging person may also find new rewards in quite casual contacts which he did not find in the past. He will find himself more responsive to undemanding contacts with comparative strangers, and less interested — unless dependent upon them for food and shelter — in becoming involved in a close and binding way with his own relatives.

It is at this time in his life cycle that the aging person can for the first time since childhood afford to be carefree. With the thinning of his ties of obligation to others, he can gratify some of his more personal desires and ignore some of the harsher strictures of social life. In a study of the deliberations of juries by James and Strodtbeck, Miss James comments that it is the older and the younger people who reach the most lenient verdicts. It is the middle-aged persons, bound to the task of keeping society's rules, who reach the harshest ones. One woman encountered in our study told us that she had returned to work when her children left home, not because she needed the money, but because there they told her just what she was required to do. She remarks that this is much easier than the responsibilities of community organizations she formerly had. "Let the young women worry about the community," she said. "I don't even want to give advice to the young girls I work with, so I don't even eat with them—it's so nice to be free." As Lady Astor, at 80, regretably not one of our subjects, is quoted by *Time* magazine as saying, "I used to worry about being old. I thought I wouldn't be able to do the things I'd want to do. Now I find I don't want to do anything after all."

This all suggests that the very old person is free to die because he has long since withdrawn himself from the on-going stream of life. In his last years he may pick up old trains of thought, and while enhancing those aspects of living that are immediate and have no consequences, turn back to the thoughts of his own past to relive those older enduring and now undemanding relationships. As one old lady says: "I do so love to be alone. I can think then."

Finally, the movement into extreme old age, readiness for death, leaves the aged person almost totally preoccupied with inner states and with the most instantly gratifying of outside contacts. His pleasures reside in meals, outings, and in friendly, undemanding companionship. In general, he displays behavior characteristic of one who has withdrawn his investment from the world around him and reinvested it in himself.

If the old person faces a crisis appropriate to his age, it may be that of accepting or rejecting the past which supplies the content of his inner life. As Grotjahn (3) comments: "The task of integrating one's life as it has been lived and the final acceptance of one's own death are problems of existence. To deal with them is the great task of old age. They are essentially different from the tasks of infancy, childhood, adolescence, and maturity."

This process of disengagement involves changes of a social and of a psychological nature. The arguments and data related to the social interaction side of disengagement are presented by Dr. Cumming in her paper at this Convention (1) and elsewhere (Cumming, 1960). I have presented this overall theory here in order that you may more clearly envision the context within which we believe personality changes occur.

The first group of hypotheses which we have which appear to suggest personality changes with age related to the theory posited above are those stemming from a study of younger and middle-aged persons. This is a study conducted quite independently of the Kansas City work principally dealt with here. It involved the Thematic Apperception Test responses of three groups of men employed in administrative positions in business — one group with a mean age of 30 years, one 40, and the oldest group with a mean age of 50. The method of this study is based upon a system for describing and grouping dominant thema and is described elsewhere in a monograph by Schaw and Henry (5). In this analysis emphasis is placed upon three central elements of personality reflected in the TAT:

1. *The nature of their view of the outer world*—that is, the assumptions regarding the characteristics of people and situations around them.
2. *The nature of the assumptions regarding their own inner world,* that is, their view of the techniques and resources they can bring to bear upon the solution of outer world problems or the attaining of their personal needs and desires.
3. *The nature of the interaction* proposed between these two worlds and the outcome of this interaction.

For our purposes here, I may briefly summarize our findings. It is apparent, first, that these three groups of men do indeed show changes in these attributes that appear to be related to their differences in age. In particular, the *thirty-year-old group* displays a substantial agreement and consistency in their view of the outer world as achievement-demanding, in their agreement to follow assertively the cues provided them by that outer world, and by their confidence that whole-hearted devotion to these achievement demands will result in the successful accomplishment of their personal ambitions. Thus their preoccupation with inner world contemplation is minimal, their conflict over possible routes of action is minimal as is their discharge of affect and emotion, since their techniques of relating themselves to self-simplified outer world goals are direct and efficient.

The *forty-year-old group* tends to view the world outside them far more in terms of potential conflictual elements and attempt their solution through the utilization of introspection and inner resources. The aim of these problem solutions seems to be an effort to reestablish a sense of personal integrity through a reexamination of their inner drives and goals and a concomitant questioning of the outer world achievement demands—demands which to the 30's seem so right and reasonable. In this situation the direct awareness of their own emotion and affect becomes heightened.

The *fifty-year-old group* continues, as did the 40's, to experience outer world events as conflictful and demanding, yet appears to find a resolution in immediate experience. They move to a heightened involvement with abstract integrative systems with which they preoccupy themselves as an instrument of avoiding specific commitments to action. As in the 40's, increased personality differentiation and complexity occurs. However, in the 40's this complexity appears to serve the ends of integrating inner and outer world to the end of adequate problem solution, whereas for the 50's these processes suggest a compartmentalization within an increasingly isolated inner world.

These findings tentatively suggest the possibility of describing personality changes with age in terms of established personality integrations undergoing rephrasing under the necessity to adjust to internal and external changes. The consistency with which these changes appear in these data suggests that in middle maturity normal working business men experience a need for the reconsideration of established personality patterns. If these factors do indeed constitute an age trend, the rephrasing leads away from the possibility of finding immediate and satisfactory resolutions in terms of the 30-year-olds' conflict-free active mastery, and suggests a movement of energy into an internalized form of passive mastery of an ideal abstracted inner world—a world of their own creation, governed by their own rules.

The basic nature of this principle of change appears to be a movement from an *active, combative, outer world orientation* to an *adaptive, conforming and abstract inner world orientation.*

A further test of this proposal is provided by some parts of a study undertaken by Dr. David Gutmann. Dr. Gutmann's study is based upon TAT material from a group of men ranging in age from 40 to 71.

In a preliminary examination of subjects Gutmann proposed a system of five personality types which appeared to account for the major personality variation found within the sample. In order to submit to examination the question of the relation of these types to age, he composed a larger sample of 145 subjects covering a 40 to 71 year age span and coded each record in such a manner as to disguise their age. He then analyzed each record in terms of its fit to the five personality types and subsequently decoded them and arrayed them by age against type. This permits an estimate of the occurrence of each type by age and a statement of trends with age.

The types in question are themselves arrayed along a continuum analagous to the principle of change appearing in the first study described above—a continuum from the *active, combative outer world orientation* to the *adaptive, conforming inner world orientation*. For the sake of simplicity in presentation, I shall merely identify these as type I through V, it being understood that I and V represent the extremes of this continuum and II, III and IV represent intermediate steps. There is in these types no assumption of adjustment or maladjustment, though such a relationship may appear upon subsequent investigations. Thus a predominance of types I and II suggests a group of persons actively involved in relating themselves to the world of outer events. A preponderance of types III, IV, and V suggests a movement away from such outer world involvement and an increased emphasis upon internal, self-oriented events.

Before the relation of type to age was tested for significance, one further analytic judgment was made. Each case was judged to be either an *Externalizer* or an *Internalizer*. This judgment was made, again blind for age, on the grounds of a series of predetermined criteria related to the extremes of the outer world to inner world orientation discussed earlier. On the theory that personality change, if it appeared, would be clearer if related to initial overall personality type, the cases were examined within each overall type, that is, the Externalizers were examined for the relation of age to type, and then the Internalizers. In the Externalizers we find a relation of types to age which on a Chi Square method is statistically significant at beyond the .01 level. This clearly suggests an overall trend with age in the direction of increased preoccupation with inner world events and an increased isolation from outer world stimulation. At the same time it implies a reduction in the assertive combative elements and an increase in conforming passive mastery through inner life contemplation. In the Internalizers an identical trend is found, though significant at between the .02 and .05 level of confidence. This slightly different confidence level may be an artifact of the sample, and may indeed reflect a tendency for those who are basically more prone to Internalization to change less noticeably—even though still in the direction of increased internalization. Combining the group shows the same trend significant at the .02 level.

These data are in effect clinical judgments which may or may not be reproducible by another person. We are now in the process of investigating the reliability with which these judgments may be made. However, Dr. Gutmann has already devised a system of scoring, in a more objective fashion, certain elements of TAT stories which reflect, or so we believe, the same psychologic issues embodied in the types. The first test of this system, when related to age in the same sample of subjects, shows developments paralleling the shift in types already seen. These changes are significant at the .05 level when we divide them by three age groups, and at the .001 level when we deal with only the bottom and top third (4).

These data appear to us to suggest the same kind of disengagement from the social nexus of interrelation posited by our overall theory. They would appear to contain one element in addition to the increased interiority required in that theory. That element is the seeming reduction in active energy, or at least a shift from active to passive modes of problem solution which accompanies the shift in saliency from the outer to the inner world.

In another quite independent study, Miss Jacqueline Rosen has undertaken to examine age changes in personality in the same basic sample of cases. Her sampling permits attention to categories of class, and sex, as well as age. Cases were again rated blind for all these sample components, each index being rated separately to avoid the possible halo effect of one index upon another.

The issues dealt with stem from reflections upon Zygmunt Piotrowski's discussion of the Rorschach M-response but should not necessarily be seen as a test of that concept. The issues may be roughly called estimates of *ego energy* and divided into

1. Estimates of the *extent of involvement of ego in outer world events.*
2. The *qualitative nature* of these involvements.

The *ego involvement* issues are measured by two scores:

1. The number of introduced figures in stories. Here the logic proposes that it requires more spontaneous ego involvement to burden a story with figures not actually pictured in the stimulus than to compose a story dealing only with the picture figures.
2. The presence in a story of any element of content involving "conflict" or "controversy." By this is meant the introduction of any reference to issues requiring decision, choice, self-denial, argument—the proposal being that it requires more ego involvement to do so than is required to either merely describe and enumerate or to compose a plot completely devoid of such impeding or controversial points. This applies whether or not the story is negative or positive in tone.

The *quality of ego energy* is measured by two indices:

1. The rating of emotional intensity, based on an estimate of the extent to which any affect states described actually play a role in the story.
2. A count of whether the activity described is assertive rather than passive.

These four indices once decoded and distributed by age, sex, and social class were submitted to an analysis of variance. Neither the social class nor sex components account for any significant proportion of the variance in any of these indices. Age, however, does.

All four indices show significant declines with age, the breakpoints differing somewhat.

1. The ego involvement measures both decline, the count of posing of conflict and controversy breaking between 40 and 50, and the count of introduced figures holding up until between 50 and 60.
2. The quality of involvement indices also shows declines with age, the shift from assertive to passive affect occurring between 40 and 50, and the intensity of affect declining progressively but showing significant differences

only when comparing the 40's with the 60's.

These results, framed in somewhat different concepts, appear to us to strengthen the definite shift toward internal preoccupations and to passive techniques of problem mastery seen in the material presented earlier.

When seen in the light of our overall theory of disengagement, these personality changes seem consistent with, and a necessary accompaniment of the gradual process of disentangling the self from the network of mutual responsibilities, social interactions, and strong object cathexis so characteristic of the middle-age years.

I have not dealt as yet with the crucial question of how these developments in the psychological and social aspects of older age relate to issues of morale and of successful adaptation to the demands of deriving for oneself a state of mind consistent with a personal universe shrinking both from inside and from without.

We do, however, have some, as yet insufficient, evidence of that accompanying sense of passive enjoyment and that sense of isolation without desolation which our theory proposes. We also have an Index of Morale, reliable in its derivation and independent of social class factors, which we hope will be the key to these relationships. Now I can only report that those individuals who are age-inappropriate in terms of the developments described—whether among our middle-aged or our old-age subjects—tend to be those of low morale. We do imagine that it will turn out that there will be, within the overall framework of this disengaging trend, more than one style of aging positively correlated with high morale.

If any major portion of the findings of this research can be substantiated in parallel investigations, we believe that we do indeed have evidence of developmental demands characteristic of old age and qualitatively different from the developmental stages of childhood, adolescence, and adulthood. If so, the central axis of this stage is the process of disengagement —which serves as the mechanism for integrating one's life as it has been lived and the final acceptance of the reality of death, as Dr. Grotjahn has commented—and as a logical parallel of Erik Erikson's focal conflict of this age, ego-integrity versus despair, and of the psychological modality of that period, "To be, through having been to face not being," (2).

REFERENCES

1. Cumming, Elaine, Dean, Lois R., Newell, D. S., and McCaffrey, Isobel. Disengagement—a tentative theory of aging. Paper read in meeting of Division 20, American Psychological Association, Cincinnati, 1959. (In press—*Sociometry*)

2. Erikson, E. H. Identity and the Life Cycle. *Psychological Issues*, 1959, *1*, No. 1.

3. Grotjahn, M. Analytic psychotherapy with the elderly. *Psychoanalytic Review*, 1955, *42*, 419-427.

4. Gutmann, D. L., Henry, W. E., and Neugarten, Bernice. Personality development in middle-aged man. *American Psychologist*, 1959, *14*, 351 (abstr.).

5. Schaw, L. C., and Henry, W. E. A Method for the Comparison of Groups: A Study in Thematic Apperception. *Genet. Psych. Monogr.*, 1956, *54*, 207-253.

Received September 5, 1959

Texture Responses in the Rorschach and in a Sorting Test[1]

MARY D. AINSWORTH AND JAMES L. KUETHE
The Johns Hopkins University and The Sheppard and Enoch Pratt Hospital

Klopfer proposes that shading responses show how the needs for affection and dependency are organized within the personality. He formulates his rationale as follows: the shading effects create some kind of "contact sensation," which evokes in the subject his need for basic emotional security, which in turn evokes the prevailing emotional response to this need in the life of the individual, which then influences the conceptual use of the shading stimuli (15, p. 580).

The primary purpose of the project here reported was to explore the underlying assumption that shading evokes a "contact sensation." If this is so, the way in which the person responds to Rorschach shading should be positively related to the way in which he responds to the textured qualities of tangible objects in everyday life.

This study confined itself to one type of Rorschach shading response, namely the surface or texture response scored *Fc* or *cF*. This response seems to involve the following variables: (a) the ability to discriminate differences in shading, (b) the interpretation of a visual stimulus complex in terms of a tactual concept, (c) the formation of a texture concept, in terms of the integration of the features of blot contour and shading, indicating that the person not only perceives texture, but uses the variable of texture as a basis for organizing his experience in conceptual terms, and (d) spontaneous verbalization that shading was a determinant of the concept.

It seemed desirable that the task selected to serve as the criterion of the response of the person to the textured qualities of real objects should involve the same variables as those implicit in the Rorschach texture response. A sorting task was devised to include these four variables, although it was recognized from the beginning that such a task might give more emphasis to the intellectual variable of concept-formation than does the Rorschach texture response itself.

It was also anticipated from the outset that differences in response to texture would be found between men and women and between normal, neurotic and psychotic subjects. If Klopfer's hypothesis is correct, sex differences may be expected in the perception of texture. In our culture more pressure is directed toward males than toward females to conceal or submerge their needs for affection and dependency. The concepts of shading denial and evasion are relevant here, since both are hypothesized to indicate a reluctance to accept a need for affection that is nevertheless present (2, p. 346). Men may be expected to deny or evade shading more frequently than women, since they may be expected more frequently to be conflicted about acknowledging their needs for affection and dependency. Psychotic patients are expected to give fewer texture responses than non-psychotics, on the assumption that their basic security needs were inadequately satisfied in infancy, leading either to a subnormal development of needs for affection and dependency or to a repression of such needs. Neurotic patients are expected to show more extreme reactions with respect to texture than either normal subjects or psychotics, on the assumption that more of them have an exaggerated need for affection and dependency, some being aware of it and others being defensive about acknowledging it.

To supplement the exploration of

---

[1] An earlier version of this paper was read at a meeting of the Eastern Psychological Association, in Philadelphia, April, 1958.

the basic hypothesis that there is a generalized mode of response to the textural variable, secondary hypotheses relating to sex differences and differences between diagnostic groups were formulated, in the expectation that testing these secondary hypotheses, as well as testing the basic hypothesis separately for the various groups of subjects, would yield information relevant to an understanding of the limitations of the basic hypothesis.

In summary, the following hypotheses were tested in this study:

1. There is a degree of sensitivity to texture characteristic of the individual that is generalized enough that the frequency of Rorschach texture responses is positively related to the extent to which texture is used in responding to real objects.
2. Women produce more texture-determined responses than men, in responding both to the Rorschach blots and to real objects.
3. Psychotic patients produce fewer texture-determined responses than either normal subjects or non-psychotic patients.
4. Men more frequently than women deny or evade their sensitivity to the Rorschach shading effects.
5. Non-psychotic subjects more frequently than psychotic subjects deny or evade their sensitivity to the Rorschach shading effects.
6. Non-psychotic patients have more extreme reactions with respect to texture-determined Rorschach responses than either psychotic patients or normal subjects.

METHOD

The Texture Sorting Test

The task involving the response to real objects was set up as a texture sorting test, a variant of the object sorting test devised by Goldstein and Scheerer (10). The subject is confronted with a display of 40 objects that may be classified into three main categories with respect to texture, namely, soft, rough or smooth. Examples of the three classes of objects are as follows:

1. Soft. A fuzzy, yellow toy dog; a light blue pompom of rabbit fur; a red velvet ribbon; a black fishing fly.
2. Rough. A square of sandpaper; an irregular piece of grainy leather; a cube of sugar; a glass button with a rough surface.
3. Smooth. A polished wooden rhinoceros; a blue satin ribbon, a very shiny cowrie shell; a blue Christmas tree ornament.

It was intended to offer the subject a wide variety of possible bases for sorting, and so the test objects included a variety of colors, shapes, materials, and functional and content categories to make it easy for him to ignore texture if he chooses to do so.

The subjects were initially instructed to examine the objects in any way they liked, and told that they would be asked questions such as which ones they liked and which ones they disliked.

A graded series of sorting tasks was then presented to the subject as follows:

Level 1: Likes and Dislikes. The subject was asked to select the object he liked the best and then to find the other objects that belong with it in some way. He was then asked why the chosen objects belonged together and why he liked the object he selected first. The same procedure was followed for the most disliked object.

Level 2: Permissive Sorting. The subject was then presented with a specified object, asked to find the others that belong with it, and then to state why they belong together. Nine objects were thus presented in series, three of each textural category in an alternating order.

Level 3: Directive Sorting. The subject was then presented with four specified soft subjects, requested to find the other objects that belong with these, and then to state why they all belong together. The same procedure was followed for four rough objects and for four smooth objects. Each of the groups of objects was so selected as to make it difficult to find any common quality except texture.

Level 4: Forced Sorting. The subject was presented with three buttons differing in color and material as well as texture, and asked to sort all the objects into three piles using the buttons as the basis of classification. It was impossible for the subject to sort *all* the objects into three groups on the basis of color, material or any other single variable except texture, unless he relied upon very loose idiosyncratic bases of organization that had no clear connection with the sample objects.

A scoring system was specified in detail, each sorting receiving a score of 4, 3, 2, 1, or 0, the zero being reserved for sortings that did not involve texture at all, either in terms of the selection of objects or in terms of the verbalization of their similarity. The intermediate scores of 3, 2, and 1 were assigned to responses that departed from the adequate with respect to either the sorting or the verbalization. The scoring system proved to be highly reliable. Two judges agreed with respect to 98.8 per cent of the responses that held any possibility of a textural concept. A total score was calculated for each subject by finding the mean score for each of the four levels of sorting and summing these mean scores.

In a similar fashion a score was found for the permissive phases of the test (Levels 1 and 2) and for the directive phases of the test (Levels 3 and 4).

The Rorschach Texture Score

The Rorschach was administered individually and scored according to the method specified by Ainsworth and Klopfer (1). On the basis of the clinical impression that one or two responses in which emphasis was given to soft, furry qualities were as significant interpretatively as a larger number of responses based on other surface qualities, weights were assigned to each of the responses given a main determinant score of *Fc* or *cF*, in accordance with the nature of the texture response involved. The weights were as follows: a weight of 6 was assigned for soft texture; a weight of 4 was assigned for rough texture, smooth texture, three-dimensional carved or modelled surfaces, and for a few texture responses that were impossible to classify in the other categories; a weight of 2 was assigned for transparency, achromatic representation of chromatic color, and the use of shading to give a differentiated pattern. Each additional texture response was given a score of half the weight assigned to a main response of similar nature. Two judges agreed with respect to 98.7 per cent of the Rorschach texture scores, both the original *Fc* or *cF* scoring and the weighted score. In order to check the judgment that the weighted Rorschach texture score was best for the purposes of this study two additional scores were obtained for each subject: $(Fc + cF)$ and $(Fc + cF)/\mathrm{F}$.

In addition, the Rorschach protocols of all subjects were examined, and those were identified that showed shading denial, evasion or insenitivity, according to the criteria specified by Ainsworth and Klopfer (2, p. 346).

Subjects

The Rorschach and texture sorting tests were administered to 34 male university students in an introductory psychology course, and to 80 mental hospital patients. The patients were divided into four groups of 20 each: psychotic men, psychotic women, non-psychotic men, and non-psychotic women. The psychotic groups were composed of pairs of men and women matched according to diagnostic classification. An attempt was made to match the non-psychotic groups also, but it was not possible to carry this through to completion because of the relatively small number of non-psychotic patients in this hospital and

Table I—Correlations between Weighted Rorschach Texture Scores and Texture Sorting Scores

Group	N	Permissive Sorting		Total Sorting	
		tau	p	tau	p
Total patients	80	.224•	.002	.232•	.001
Psychotic patients					
Men	20	.204	.102	.205	.100
Women	20	.332•	.019	.353•	.014
Total	40	.280•	.005	.300•	.003
Non-psychotic patients					
Men	20	−.043	.394	−.053	.371
Women	20	.146	.181	.047	.386
Total	40	.178	.053	.165	.067
Normal male students	34	.004	.488	.004	.488

• Significant at the 5 per cent level or better for a one-tailed test.

the broad variety of diagnostic classifications represented among them. Patients known to have acute and chronic brain syndromes were excluded.

Results

Kendall's rank correlation coefficients were calculated between the weighted Rorschach texture scores and the total texture sorting scores. (See Table I.) It may be seen that a low but highly significant positive correlation was found for the total group of hospital patients, but a zero correlation was found for the student group. When the various groups of hospital patients are considered separately, it may be seen that there are significant positive correlations for the total psychotic group and for the psychotic women, while the positive correlation for the psychotic men approaches significance. The very low positive correlation for the total non-psychotic group approaches significance, but when the non-psychotic men and women are taken separately the correlations are zero.

The hypothesis that there is a generalized and characteristic mode of responding to the textural qualities of stimulus objects is thus supported by the hospital group as a whole, but not by the normal student group. Moreover, the hypothesis is supported more strongly by the psychotic group than by the non-psychotic group, and more strongly by the psychotic women than by the psychotic men.

Since the directive phase of Rorschach testing that is represented in the testing of the limits is not represented in the Rorschach texture scores, it seemed plausible that there might be a closer correlation between the two tests if the directive phases of the texture sorting test were excluded and the score based upon the permissive phases alone. This second set of correlations is also shown in Table I. It may be seen that two sets of correlations are substantially the same, except that there is a low and non-significant positive correlation for the non-psychotic women when the permissive texture sorting score is used rather than the zero correlation found when the total texture sorting score was used. The correlation for the total non-psychotic group is slightly higher and approximates the five per cent level of significance. The correlations for the non-psychotic and normal men remain zero, and those for the psychotic groups and the total patient group are slightly reduced, although with no substantial changes in the significance levels.

A check was made to ascertain whether the $(Fc + cF)$ scores or the $(Fc + cF)/F$ scores might be more closely correlated with the total texture sorting scores than were the weighted Rorschach texture scores. This check was made only for the total patient group, and correlations of .208 ($p = .003$) and .162 ($p = .017$) were found. Thus the unweighted Rorschach texture scores are significantly and positively related to the texture sorting scores, but somewhat less closely than are the weighted Rorschach texture scores.

The medians of the weighted Rorschach texture scores, and the permissive, directive and total texture sorting scores for all groups are shown in Table II. It may be seen that the non-psychotic women obtained a substantially higher median Rorschach texture score than that of any other groups. Group differences were tested by the Mann-Whitney U test. The non-psychotic women gave significantly more texture responses ($p < .002$) than the non-psychotic men, thus lending support to the second hypothesis, but no significant difference was found between men and women of the psychotic group. The non-psychotic women gave significantly more texture responses than the psychotic women ($p < .05$), thus lending support to the third hypothesis, but no significant differences were found between the non-psychotic male patients and either the psychotic males or the normal male students.

In the case of the total texture sorting scores, as in the case of the Rorschach texture scores, the non-psychotic women were significantly higher than the non-psychotic men ($p < .02$), thus supporting the second hypothesis, but no significant difference was found between men and women of the psychotic group. The non-psychotic women also had significantly higher scores than the psychotic women in the sorting test ($p < .02$), but here significant differences were also found between the various male groups. The normal men used significantly more texture than either the non-psychotic or psychotic men ($p < .01$ and $p < .001$ respectively), and there is also a tendency for the non-psychotic men to use more texture than the psychotic men ($p < .08$). These findings support the third hypothesis.

When the medians for the permissive phases of the texture sorting test are considered separately the findings are essentially the same for the comparisons between the male and female groups, and for the comparison between non-psychotic and psychotic women. The non-psychotic women used texture significantly more than the non-psychotic men ($p < .02$), while the difference between the psychotic women and the psychotic men was not significant. The non-psychotic women used significantly more texture than the psychotic women during the permissive phases of the test ($p < .03$), but, in contrast with the total texture sorting scores, the differences between the male groups were less significant. The normal males still use more texture than the non-psychotic and psychotic males but the differences are less significant ($p < .03$ and $p < .013$) and it is clear than the conspicuous superiority of the normal men over all patient groups with respect to their total texture sorting score is attributable to the use they make of the directive phases of the sorting test. As for the male patient groups, the difference between the non-psychotics and psychotics is clearly not signifi-

TABLE II – Rorschach Weighted Texture and Texture Sorting Medians

Groups	Weighted Rorschach Texture	Texture Sorting Scores Permissive phases	Directive phases	Total
Psychotic men	3.1	.85	2.40	3.25
Psychotic women	5.0	1.55	3.20	4.75
Non-psychotic men	2.5	1.20	2.80	4.00
Non-psychotic women	16.0	2.90	3.80	6.70
Normal men	4.0	2.40	5.60	8.00

TABLE III—Incidence of Shading Denial and Evasion

Groups	Presence of shading denial or evasion	Absence of shading denial or evasion	Totals
Psychotic men	0	20	20
Psychotic women	0	20	20
Non-psychotic men	5	15	20
Non-psychotic women	3	17	20
Normal men	13	21	34
Totals	21	93	114

cant in the permissive phases of the test (p = .40).

Table III shows the incidence of shading denial and evasion in each of the five groups. It may be seen that shading denial and evasion are absent among the psychotic patients, present among the non-psychotic patients, and even more frequently present among the normal subjects. When the men and women for each of the psychotic and non-psychotic groups are combined, a chi square of 18.29 is found, which is significant at the .001 level for two degrees of freedom. This finding supports the fourth hypothesis.

It may be seen also in Table III that shading denial and evasion are more frequent among the male subjects than among the women, as hypothesized. The chi square for this comparison is 3.84, which is significant at the .05 level.

The 21 subjects who were classified as showing shading denial or evasion received low or zero Rorschach texture scores, but all but 5 of these received scores above the median on the texture sorting test. A median test shows that this departure from chance is significant at the .02 level. It is clear therefore that the performance of this denial and evasion group serves to reduce the correlations between Rorschach and textures sorting scores for the student and non-psychotic groups.

With respect to extreme reactions the normal and non-psychotic males were not found to be significantly different. When grouped together they had more extreme reactions than the psychotic males, a chi square test yielding a .05 level of significance. Thus the male groups lend support to the sixth hypothesis, but not the female groups, who did not differ significantly with respect to extreme reactions.

DISCUSSION

The findings for the hospital patients, in general, support the hypothesis that sensitivity to texture is a generalized characteristic of the individual, manifesting itself in his responses both to the Rorschach ink blots and to real objects, but the hypothesis gains no support with the normal group of university men. This is not the first time in the history of Rorschach validation research that an hypothesis, originally derived from experience with a clinical population, has failed to gain support when tested out with university undergraduates as subjects.

When the psychotic and non-psychotic groups of patients are taken separately, the hypothesis is much more clearly supported by the former group than by the latter, despite the fact that their texture scores are lower and their scatter narrower on both tests. This suggests that, although psychotic patients are less sensitive to texture than the non-psychotics, they respond with more intra-individual consistency to texture cues.

There are a number of lines of evidence suggesting that the relatively intelligent and well-adjusted segment of the population represented by university students is vulnerable to various influences making for unreliability of Rorschach performance. For example, it has been demonstrated that students can alter their performance in accordance with experimentally induced sets (14), and that the most "mature" and "rich" personalities are the ones who can effect the greatest changes (9). It has been found that normal subjects are not only sensitive to artificially altered test atmosphere, but also change their performance in response to the personalities of different examiners (17). On the other hand, clinical impression suggests that the more severe the pathology of the subject the less susceptible his performance is to suggestions given to him in the test situation and the more helpless he is to alter his responses. Therefore, it seems reasonable to find that psychotic patients show greater consistency between two samples of responses to a given stimulus variable than do non-psychotic patients or normal subjects.

Little (16) suggests that the low validity indices often found for projective techniques may stem both from the fact that they involve too small a sample of behavior for reliability and from the possibility that different determiners of behavior are involved in semi-structured situations than in other situations. He proposes that in times of great stress all determiners may be mobilized in all situations, but under less extreme conditions we are much more differentiated.

When the present authors suggested that a similar phenomenon might be involved in their findings of a higher correlation between two measures of texture sensitivity among psychotics than among non-psychotics, Little[2] stated his belief that psychotics have less intra-individual variability than normal people. Psychotics who do poorly on one type of projective task tend to do poorly on all other types, having restricted content, fewer alternative responses and the like. Little interprets this as implying fewer determining factors in the behavior of psychotics than in that of normals and refers to a study on the MMPI (20) for support of this view.

The concept of intra-individual variability, about which Fiske has written extensively, seems pertinent to the present study, despite the fact that Fiske has concerned himself chiefly with what he calls Type I variability (7), which is the variability of the individual's response to two presentations of the same stimulus in the same situation at two points of time, whereas the present study refers to the variability of the individual's response to similar but non-identical stimulus features in two different situations, which somewhat resembles Fiske's Type III variability. Fiske (4, 6, 18) has reported substantial intra-individual variability in responses to a sentence completion test, the variability being great enough to lead to significant differences in the interpretation of an individual's protocol. Fiske (5) believes that projective tests are particularly conducive to intra-individual variability, and that the more structured the stimulation the more consistent the behavior. He suggests (3, 5) that stimuli exercise constraints on behavior, and that the completely unstructured situation represented by dreams produce the greatest degree of intra-individual variability.

Fiske and Rice (7) refer to several studies (e.g. 8, 12, 13) which report schizophrenics to be more variable than normal people in a variety of highly structured tasks, and their variability was variously attributed to poor attention, weak control, variability in set, and, in general, inefficiency. The apparent incompatibility of these findings with those of the present study may be resolved with reference to the differences in the degree of structure of the two sets of tasks, the tasks involved in the present study being relatively unstructured, although increasing structure was introduced systematically in both in the course of the test session. (In the Rorschach the testing of the limits phase introduced increasing structure.) A preliminary statement of the hypotheses suggested by the present study is that the psychotic is more consistent in his responses to relatively unstructured tasks than the non-psychotic, and less able to adapt his response to the additional cues given when the task is made more highly structured.

---

[2] Personal communication.

The set of hypotheses advanced here owes much to both Fiske and Little. It is hypothesized that the non-psychotic has a relatively large number of responses potentially available in any stimulus situation, and that the strongest response tendency may well be only slightly stronger than other response tendencies, so that slight changes in the stimulus situation may alter the relative strengths of the response tendencies and result in different responses. In this sense, the non-psychotic is more constrained by stimuli than the psychotic subject, since he is more influenced by slight changes in the stimulus situation. In contrast, the psychotic subject seems to carry around with him not only fewer response tendencies but perhaps also a more fixed hierarchical arrangement of their relative strengths, so that they tend to control his behavior in a consistent direction despite substantial differences in the stimulus situation. This consistency will be apparent in relatively unstructured situations where he is permitted to respond as he chooses. However, in a relatively structured situation calling for speed and/or accuracy in responding to a changing stimulus situation he has difficulty in altering his approach appropriately as the stimuli change and appears to be relatively inefficient and variable.

Among the findings of the present study there are several that throw light on the processes making for more intra-individual variation in the non-psychotic subjects than in the psychotics. First, the normal male group had significantly higher texture sorting scores than either the non-psychotic or psychotic male patient groups, and the non-psychotic males tended to have higher scores than the psychotics. However, significant differences between these three groups did not appear with respect to Rorschach texture scores, and the differences between the normal males and the two male patient groups were somewhat less significant for the permissive than for the total texture sorting scores, while the difference between the non-psychotic and psychotic male group was not significant for the permissive sorting scores. When responding to the Rorschach blots (except during the testing of the limits phase which does not contribute to the score) the subject is left quite free to use or not to use the shading features of the blot material, as he chooses. This corresponds to the first two levels of the texture sorting test, reflected in the permissive sorting score, where the subject is left free to choose the basis of classification. However, in the last two levels of the texture sorting test, reflected in the directive sorting score, the task becomes increasingly difficult if texture is not used as a basis for sorting. Under these conditions some subjects who ignored the textural implications of the Rorschach shading were induced to use texture as a basis for sorting objects, and this occurred most frequently with the normal student group. Thus the higher texture sorting scores of the normal males may be interpreted as a greater responsiveness to increasingly directive cues in the stimulus situation, which led to responses that had not been made under more permissive conditions. The tendency to organize their experience in terms of texture concepts, which may have originally been too weak to result in a texture response, was strengthened in the case of these subjects.

A second line of evidence is qualitative. It was observed that some subjects found implicit in the sorting test a pressure to find as many different bases for sorting as possible. Sometimes subjects responded to the textural qualities of the subjects early in the permissive phases of the test, but did not sort by texture a second time until the directive and forced phases.

This was particularly characteristic of the normal group, who sometimes verbalized their awareness of texture and their desire to formulate some other concept. In contrast, the patients showed much less flexibility, and many of them, particularly the psychotic subjects, tended to perseverate concepts once formed. These differences in desire and ability to shift concepts seem to make for greater flexibility and hence more intra-individual variability in the normal subjects than in the patient groups.

In some subjects the tendency to utilize texture in concept formation is so weak that quite consistently they fail to respond to the textural qualities of stimulus objects. There were four subjects showing "shading insensitivity" in their Rorschach responses, according to Klopfer's criteria. All of these subjects received strikingly low scores on the texture sorting test. All were psychotic, and thus contributed toward giving the psychotic group less intra-individual variability than the non-psychotic group.

The phenomena of shading denial and shading evasion on the Rorschach are hypothesized to be ways in which the subject may reveal underlying sensitivity to texture, despite his failure to acknowledge texture as a determiner of his responses in the permissive phases of the Rorschach test. That they do indeed mask an underlying sensitivity to texture is suggested by the fact that a majority of the cases so classified received above median texture sorting scores, so that the correlation between the two sets of texture scores is reduced by the fact that some low and zero Rorschach texture scores as well as high scores reflect texture-determined perception. Again it may be noted that this source of inconsistency in overt response occurred more frequently in the non-psychotic than in the psychotic groups, as shown both by greater incidence of shading denial and evasion and by more extreme reactions, at least in the case of the male subjects.

Since verbalization of the basis of conceptualization was emphasized in texture scores of both tests, the question may be raised as to why it is that some subjects are reluctant to verbalize the textural determinants of their Rorschach concepts, but more ready to verbalize the part played by texture in the sorting test. One possible explanation is that, having been influenced by texture in concept formation, the subject is more willing to verbalize its contribution within the context of a task that he interprets as an intellectual challenge, namely, the sorting test. There is qualitative evidence in favor of this explanation, which cannot be detailed here. However, it seems reasonable to suppose that the subject may be defensive about personal non-intellectual determinants of concepts, and reluctant to acknowledge the extent to which his perception of the world is determined by affective considerations rather than by what he considers adequate logic. The fact that the men manifested shading denial and evasion more frequently than the women is consistent with this suggestion.

Two other variables which seem likely to have contributed to inconsistencies in responding to the two tasks may be mentioned briefly, although their implications cannot be discussed. First, perception of texture in the sorting test may involve a response to tactual cues as well as visual cues, whereas only visual cues are provided in the Rorschach situation. Secondly, the textural concepts of some subjects were much looser or much narrower than those that had been assumed in devising the sorting test. Subjects with very narrow textural concepts seemed to be much more highly concerned with texture than their texture sorting scores reflected, for they were too narrow to operate effectively in the more directive phases of the test.

Individual differences were observed in the intensity and quality of the affect attached to different kinds of texture. The intensity of the affect seemed to be related to readiness to sort on the basis of the textural feature in question, but the direction of the affect—whether liking or disliking—seemed quite unrelated to readiness.

The question might well be raised as to whether the differential weights assigned to soft, rough and smooth concepts in the Rorschach weighted texture score might be responsible for apparent inconsistency in responding to texture. It is not believed that this played a significant part, for the great preponderance of the Rorschach responses involved "soft" concepts, and higher correlations with the sorting test were obtained when weighted rather than unweighted Rorschach scores were used.

The lack of consistency shown by the non-psychotic subjects in responding to the textured aspects of stimulus material suggests that considerable caution is indicated in applying the interpretative hypothesis attached to texture responses with such subjects and particularly in interpreting the significance of failure to produce texture responses. A careful inquiry and a thorough testing of the limits are required in order to distinguish shading denial and evasion, which have been demonstrated here to reflect underlying sensitivity to texture, from shading insensitivity. Moreover, even when a zero or low Rorschach texture score can not be identified as an instance of shading denial, evasion or insensitivity, the clinical interpretation should be modified in terms of the readiness of the subjects to use texture in the testing of the limits phase. Consequently, in the absence of careful inquiry and testing of the limits it would seem best to consider a failure to produce texture responses as non-interpretable.

The problem of inconsistency in texture responses presents a formidable handicap in research into the validity of the Rorschach texture hypotheses. At the same time, two other lines of evidence tend to support the validity of the basic hypothesis that response to texture is related to needs for contact, affection and dependency. Harlow's (11) experimental investigation of the role played by a need for contact with a textured object highlights its importance as a basis for the child-mother relationship in monkeys. Potanin (19), acting on the assumption that one important variable in the Rorschach texture response is perception of detail, demonstrated that preference for detailed forms was positively related to a measure of dependency among normal male subjects.

It would seem highly desirable to devise special test instruments further to explore the basic hypothesis that the mode of response to texture is indicative of the way in which the needs for contact, affection and dependency are organized within the personality. In devising such an instrument it is desirable to take cognizance of the variables that enter into the complex texture response, some of which have been dealt with in this discussion, namely, ability to differentiate textural differences, reliance upon visual or tactual cues in texture perception, readiness to utilize awareness of texture as a basis for organizing experience conceptually, ability and willingness to verbalize the part played by texture in concept formation, the looseness or narrowness of textural concepts, and, finally, the intensity and quality of affect associated with such concepts.

SUMMARY

The present study was designed to investigate the basic assumption which underlies the interpretative hypotheses that Klopfer attaches to shading as a determinant of Rorschach responses. The basic hypothesis tested herein is that there is a degree of sensitivity to texture characteristic of the individual that is generalized enough that the frequency of Rorschach texture responses is positively related to the extent to which texture is used in responding to real objects. Secondary hypotheses were derived from Klopfer's interpretation that needs for affection and dependency are reflected by Rorschach texture responses.

A texture sorting test was devised as the criterion of the person's response to the textured qualities of real objects. Texture sorting scores were based upon the frequency of classifications according to texture, the conceptual adequacy of these classifications, and the adequacy of the verbalization thereof. The Rorschach texture score was obtained by assigning differential weights to various types of *Fc* and *cF* responses. The subjects were 34 male university students, 40 psychotic hospital patients and 40 non-psychotic hospital patients. The patient groups contained equal numbers of males and females.

The hypothesis of a positive relationship between Rorschach texture scores and texture sorting scores was supported by a low but significant positive correlation for the combined patient groups, but not by the zero correlation found for the normal males. Among the patient groups, considered separately, support for the hypothesis was found in the case of the psychotic group but not in the case of the non-psychotic group.

The findings relevant to the secondary hypotheses may be summarized as follows:

1. The hypothesis that women are more responsive to texture than men was supported in the case of the non-psychotic patients but not in the case of the psychotic patients.

2. The hypothesis that psychotic patients are less responsive to texture than non-psychotic subjects was clearly supported in the case of the texture sorting test, but was found to hold only for the female groups in the case of the Rorschach texture scores.

3. The hypothesis was supported that non-psychotic subjects more frequently than psychotic subjects deny or evade their sensitivity to the Rorschach shading effects.

4. The hypothesis was supported that men more frequently than women deny or evade their sensitivity to the Rorschach shading effects.

5. The hypothesis that non-psychotic subjects have more extreme reactions with respect to texture-determined Rorschach responses was supported in the case of the male groups but not in the case of the female groups.

The findings are discussed in the light of the concept of intra-individual variability. Various lines of evidence suggest that in relatively unstructured situations there is less intra-individual variability among psychotic patients than among non-psychotic patients, and more variability among normal subjects than among patients.

REFERENCES

1. Ainsworth, Mary D., and Klopfer, B. Scoring: Determinants—shading responses. In Klopfer, B., Ainsworth, M. D., Klopfer, W. G., and Holt, R. R. *Developments in the Rorschach technique*, Vol. I, pp. 126-166. Yonkers-on-Hudson: World Book, 1954.

2. Ainsworth, Mary D., and Klopfer, B. Sequence analysis. In Klopfer, B., Ainsworth, M. D., Klopfer, W. G., and Holt, R. R. *Developments in the Rorschach technique*, Vol. I, pp. 317-351. Yonkers-on-Hudson: World Book, 1954.

3. Fiske, D. W. The constraints on intra-individual variabiilty in test responses. *Educ. psychol. Measmt.*, 1957, *17*, 317-337.

4. Fiske, D. W. An intensive study of variability scores. *Educ. psychol. Measmt.*, 1957, *17*, 453-465.

5. Fiske, D. W. Variability of responses and the stability of scores and interpretations of projective protocol. *J. proj. Tech.*, 1959, *23*, 263-267.

6. Fiske, D. W., and Van Buskirk, C. The stability of interpretations of sentence completion tests. *J. consult. Psychol.*, 1959, *23*, 177-180.

7. Fiske, D. W., and Rice, Laura. Intra-individual response variability. *Psychol. Bull.*, 1955, *52*, 217-250.

8. Gatewood, L. C. An experimental study of dementia praecox. *Psychol. Monogr.*, 1909, *11*, No. 2 (Whole No. 45).

9. Gibby, R. G. The stability of certain Rorschach variables under conditions of experimentally induced sets: I. The intellectual variables. *J. proj. Tech.*, 1951, *15*, 3-26.

10. Goldstein, K., and Scheerer, M. Abstract

and concrete behavior: an experimental study with special tests. *Psychol. Monogr.*, 1941, *53*, No. 2 (Whole No. 239).

11. Harlow, H. F. The nature of love. *Amer. Psychologist*, 1958, *13*, 673-685.

12. Hunt, J. McV. Psychological government and the high variability of schizophrenic patients. *Amer. J. Psychol.*, 1936, *48*, 64-81.

13. Huston, P. E., Shakow, D., and Riggs, L. A. Studies of motor function in schizophrenia: II. Reaction time. *J. gen. Psychol.*, 1937, *16*, 39-82.

14. Hutt, M., Gibby, R., Milton, E., and Pottharst, K. The effect of varied experimental sets on Rorschach test performance. *J. proj. Tech.*, 1950, *14*, 180-186.

15. Klopfer, B. Rorschach hypotheses and ego psychology. In Klopfer, B., Ainsworth, M. D., Klopfer, W. G., and Holt, R. R. *Developments in the Rorschach technique*, Vol. I, pp. 561-598. Yonkers - on - Hudson: World Book, 1954.

16. Little, K. B. Problems in the validation of current projective techniques. *J. proj. Tech.*, 1959, *23*, 287-290.

17. Lord, Edith. Experimentally induced variations in Rorschach performance. *Psychol. Monogr.*, 1950, *64*, No. 10, Whole No. 316.

18. Osterweil, J., and Fiske, D. W. Intra-individual variability in sentence completion responses. *J. abnorm. soc. Psychol.*, 1956, *52*, 195-199.

19. Potanin, Natalia. Perceptual preferences as a function of personality variables under normal and stressful conditions. *J. abn. soc. Psychol.*, 1959, *59*, 108-113.

20. Wheeler, W. M., Little, K. B., and Lehner, G. F. J. The internal structure of the MMPI. *J. consult. Psychol.*, 1951, *15*, 134-141.

Received December 4, 1958
Revision received June 10, 1959

A System for Deriving Quantitative Rorschach Measures of Certain Psychological Variables, For Group Comparisons[1]

SARA H. ARNAUD
Arsenal Family and Children's Center and Department of Psychiatry,
University of Pittsburgh Medical School

The purpose of this paper is to present a system that derives quantitative Rorschach measures for certain psychological variables, while it attempts to approximate the usual clinical practice of arriving at an interpretation by considering all pertinent features of a Rorschach record. The efficacy of methods similar to the present one, in obtaining meaningful measures of individual emotional categories, has been demonstrated in the studies of Munroe (8, 9), Cronbach (4), Elizur (6), Walker (13), and DeVos (5), among others.

The present system was evolved in the course of research on the effects that a chronic parental illness may have on children (1, 2). Hypotheses from that study determined the areas for which Rorschach measures are presented in this paper. They are: 1) general anxiety, 2) body concern, 3) dysphoric feelings, 4) hostility, 5) constraint in interpersonal relations, 6) dependency longings, and 7) a pattern of apparently precocious but basically false maturity manifested in premature assumption of a role of responsibility, carried to the point of overcompliance and loss of emotional spontaneity.

Application of this system to adult records would probably require certain modifications in most categories and would be inappropriate in the False Maturity category.

Each of the areas is defined in terms of a number of ways that it may be manifested on the Rorschach by individuals of different personality organization. These items, called "indicators," consist of both conventional scores and qualitative features of responses. The resulting lists of indicators are limited by the fact that they were designed for children's Rorschachs, as well as by probable oversights, the existence of highly idiosyncratic ways of expressing psychic forces, and the difficulty of setting up satisfactory group standards for measuring some well known indicators such as over-long reaction time. A discussion of reasons for excluding certain other possible indicators will be found in the report of the original study (1). The presence of feeble-mindedness, psychotic or pre-psychotic disorganization, severe depression, or other pathology that might give rise to different interpretations of these indicators had been ruled out in the children studied.

Cut-off points for each indicator were established beyond the middle range of its occurrence as determined by (a) existing norms whenever available, (b) frequency distributions of the indicator in the combined experimental and control samples—usually in terms of quartiles and extreme deciles, or (c) with rarely occurring indicators, on the basis of clinical judgment. In the individual Rorschach record, all indicators that fell beyond their respective cut-off points received a check. For every category but False Maturity, the number of indicators so checked was the subject's score for that category. False Maturity was scored as present or absent on the basis of an interlocking pattern of indicators falling beyond specified cut-off points.

---

[1] Based on a portion of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, Boston University Graduate School. The writer wishes to express her appreciation to Dr. A. William Hire for his guidance, critical comment, and encouragement in the development of this scoring system. Dr. Eva D. Ferguson was most helpful in the design and execution of the reliability study.

Estimates of the intensity of a given variable for the subject in relation to others in the group are based solely on the number of its indicators he offers beyond the cut-off point. Although the various indicators of any category are not assumed to represent equal units, there did not appear to be sufficient theoretic basis for assigning weights to them. The nearest approach to such weighting lies in the attempt to ensure that the pressures behind the production of indicators might approach equivalence; this was done, roughly to be sure, by determining beyond-normal points for all indicators and by grouping together as one indicator all manifestations of any one basic way of expressing a given psychic force—e.g., as one of the manifestations of hostility: a group of responses consisting of weapons, destructive implements, and destructive animal or plant parts.

Reliability of the Scoring System

As a check on the reliability of the scoring, one indicator was chosen from each category on the basis of its potential ambiguity and its importance in the category (the latter was a retrospective judgment to exclude indicators that turned out to occur so rarely as to be of little practical importance). The seven indicators were: Shading R; frightening, threatening, or weird R; mutilation R; dysphoric shading; human or animal figures with explicit harmful characteristics; "other" oral content; and all color responses, differentiated into FC, CF, and C. From master sheets giving the incidence of all indicators in all protocols (N = 281), records were arrayed in order of the incidence of these indicators, and ten were then selected which together would give the highest representation of the indicators being investigated.

Between-scorer reliability: After another experienced Rorschach worker, Dr. Eva D. Ferguson, was trained in the scoring of these indicators on four randomly chosen protocols, she independently scored all responses in the ten protocols for the presence of any of the seven indicators. The proportion of responses where one of the indicators was scored by either or both of the scorers was 48.2 per cent (N = 299). When Dr. Ferguson's results were compared with the scores originally assigned by the writer to each response in each protocol, agreement occurred in 83.3 per cent of all responses. When the comparison was made in terms of whether an individual case fell above or below the cut-off point for each indicator, the two workers agreed 95.7 per cent of the time.

Reliability over time: The writer rescored the ten protocols for the seven indicators approximately three years after her original scoring and without access to the latter. Comparison of the two sets of scores showed agreement in 93.3 per cent of all responses (the proportion of the total responses receiving a score either the first or second time was 49.3 per cent).

Validity of the Scoring System

The selection of indicators has been quite conservative in the sense of taking only those reasonably well established on experimental or clinical-empirical grounds or well supported by an extensive body of perception theory and findings. Though their validity has not been an experimental focus, certain inferential information has emerged from the study of children of multiple sclerotics. To a statistically significant degree, this scoring system succeeded in differentiating two groups of children along lines that had been hypothesized beforehand on the basis of personality-development theory and clinical observation, in each of the seven categories presented here.

Special note should be made of the not unexpected finding that few individual indicators discriminated sharply between the two groups. It is when indicators related to a psychological category are combined or summed that meaningful differences emerge. This generalization may be applied with equal force to sex differences, which seldom have been found statistically significant when the concern has been with single Rorschach variables but which do assume prominence when psychologically coherent categories are considered (1, 2).

APPLICATION OF THE SCORING SYSTEM

Rorschach records are obtained in the standard individual administration with inquiry. Each is then checked for the presence of all indicators defined in the following section. Formal scoring is based on Klopfer's method (7), with two differences: (a) Multiple determinants are scored when two or more determinants seem equally strong. (b) FC and CF differentiation is based on the traditional interest in which aspect — form or color—the subject himself puts major emphasis on.

In general, indicators are scored only from main responses, but there are two exceptions: (a) In the case of subjects who offer few responses during the first administration (in our study, less than the first quartile of the distribution for total R in the two samples), but who expand and add new responses during the inquiry, the latter responses also are included in the scoring; and (b) in scoring the False Maturity pattern, additional color responses are counted. Qualitative elaborations that emerge only in the inquiry are scored the same as those that appear in the free association. But in formal scoring categories, such as shading, the hesitancy with which they emerge is considered, following standard Rorschach procedure.

A percept can contribute only one indicator to any one psychological area; when, rarely, a response may satisfy the definition of two indicators within the same category only the dominant one is recorded. A partial exception occurs in the area of General Anxiety where Shading Per Cent and Evasive-R Per Cent may include among their components, percepts that serve as the basis of another anxiety indicator. The same response, however, can be scored in more than one category — for instance, under both anxiety and hostility — since, as Schafer (12) has put it, " . . . the same content may be looked at from different points of view and may enter into different thematic clusters."

When the scoring has been completed, the number of times each indicator appeared in a record is counted. If the amount is above the cut-off point, the indicator is checked as present to a significant degree. The number of indicators so checked in each psychological category is the subject's score for that category and may range from 0 up to 3 or more. The False Maturity pattern is scored as present or absent on the basis of an interlocking set of indicators shown in Table I.

SCORING CRITERIA FOR INDICATORS

An extensive discussion of the literature on the meaning of these indicators, together with reports on published norms where such are available, is given elsewhere (1). Each indicator is defined below. Examples are added for the qualitative indicators but not for formal scores since the latter are used in accordance with Klopfer's (7) definitions, with the exception of FC, CF differentiation mentioned above. Cut-off points refer to the figure at and above which the indicator is checked as present to a significant degree; quartiles and percentiles are computed from published norms or from frequency distributions of the indicator in samples available to the investigator.

General Anxiety

1. *Shading per cent:* Proportion of total R employing any form of c, k, or K shading as a main determinant. Percepts containing shading may also be scored under other anxiety indicators. Cut-off: Q_3.

2. *Little m:* Percepts using any form

of little m as a main determinant; confined to inanimate movement and precarious balance and not including Klopfer's expressive m. If a percept with little m is also a frightening one, it receives only one check under General Anxiety, the check being assigned to whichever indicator seems dominant. Cut-off: Q_3.

3. *Evasive R per cent:* Proportion of total R consisting of: a) Vague, amorphous percepts where the subject really does not commit himself, such as blot descriptions, outlines, geography, vague designs, vague anatomy, vague "leaves." b) Perseveration—e.g., three or more appearances in a record of average length — of non-specifically shaped items such as clouds, hills, sticks. c) Highly impersonal content such as alphabet, geometry, punctuation. Cut-off: 90th percentile.

4. a) *Frightening or threatening figures, scenes, or situations:* Percepts so described or with strong cultural implications of threat, conveying the feeling that the world is a dangerous place. Not included unless their threat was specified by the subject were bombs, firecrackers, explosions, battle scenes, scarecrows, crocodiles.

Examples of figures scored: ogre, witch, vulture, madman, dragon, ghost, skeleton (when not merely perseverative anatomy), hangman's mask; also references to parts of such figures — witch's hat, devil's nose; descriptions in terms of scarey, spooky; figures which when described as aggressive have a terrifying quality — giant who eats people, goblin with claws.

Examples of frightening situations: humans or animals falling, fleeing (but not just running), aggressively attacked, on fire, helpless; "Hell where people are punished," "somebody buried in a mountain," "dog caught in a tree"; "snail's aerials they stick out to see if it's safe so they can start crawling and find a new home"; also specifically stated protections against danger, such as "water wings for if you fall in the water."

b) *Concepts involving strangeness or weirdness,* either explicitly stated or inherent in the percept—e. g., man from Mars, "invisible man of flame," mummies, "very queer looking bug," prehistoric man, "foreign butterfly," "bird people," "Aztec god." There is often an overlap of (a) and (b) in the same percept; either or both in a single response is scored as one. Cut-off: Q_3.

5. *Rejection of a card,* without apparent negativism as judged by refusals to do other things; whether or not recovered in inquiry. Cut-off: Q_3.

Body Concern

Sex differences may influence this category.

1. *Anatomy responses:* Human or animal, including x-rays, but not including "blood" by itself. If the usual H area on Card III is seen as skeletons in human movement, the percept is not included under anatomy responses; if, however, no movement is present it is counted as anatomy. Cut-off: Q_3.

2. *Mutilation responses:* Animals, humans, or objects described as in some way hurt, injured, diseased, dying (but not merely as dead), or damaged. It does not include: a) Reference to a part as missing when the blot justifies such an observation or is generally seen that way (e.g., head on central human figure on Card I) without any remark about how it may have happened (such as "cut off"). b) Criticism of the blot as not being a "good" human or animal. c) Responses that are predominantly anatomy or are concerned with deformity in human or animal figures (see following indicator). Cut-off: one.

Some examples are: Things cut, broken, chopped off, shattered, split, bloody, etc.; "old house falling apart", log with branch chopped off, "old torn ukeleles," "cat run over by steamroller," "dog's paw dropping like they do when they're hurt," "butterfly with thing out of middle" (loss of vital parts, not simple deformity). Also Rs which include both agent of aggression and his injurious deed — "monster who chops people's feet off," "claws clawing a dog's tail."

Mutilation responses often involve admixtures of hostility-aggression and/or dysphoria and are so scored when the aggression is dwelt on or the agent is explicity mentioned. They are not included under Frightening R unless the percept would have been so scored aside from the damage involved —e.g., "*haunted* house falling apart," "*gorilla* with his foot chopped off."

3. *Deformity in human or animal figures:* Reference to figures somehow deformed or disfigured without any implication of a missing part having been removed by force or accident. Not included are references to missing parts in areas where the blot justifies such an interpretation or it is often given. Some examples are: one-legged man, "Aztec god with misshapen head and practically no body or arms," two-headed human or animal, "bow legs," Siamese twins when the emphasis is on the deformity not merely their union. Cut-off: one.

Occasionally such a response will also be scored under Frightening R, but this occurs only when the deformity merely heightens an already frightening or strange image or adds a grotesque or frightening character to it.

4. *Other content related to concern about the body and its malfunctioning* and not included in the preceding indicators—e.g., medical thermometer, ether bottle. Cut-off: one.

Dysphoria

The separation of anxiety and dysphoria is not easy and may at times seem artificial since the two are so often intermeshed; in Beck's Y scoring category, for instance, they attain something of an interpretive equivalence. Anxiety and dysphoria appear to be linked by a basic unpleasant feeling tone, but may, perhaps, be usefully differentiated in terms of anxiety expressing the associated apprehensive tension, while dysphoria reflects a more specifically depressive, unhappy affect. The category of dysphoria presented here attempts to pick up such sad, depressive feelings. Sex differences may influence this category.

1. a) *Black or grey as surface color (C') in a record without counterbalancing bright-color richness:* Dark C' equals or exceeds color R.

Or, b) *Shading described in terms of darkness or gloom*, e.g., dark clouds, thunderstorm, black smoke, tornado (if visualized in terms of dark threatening clouds), "dark trees [undifferentiated] over which the sun is shining." Cut-off: one, (a) or (b).

2. *Other dysphoric content:* Percepts not covered by indicators 1 and 3 in this category and where gloomy, sad, or hopeless qualities are either verbalized by the subject or are in our culture almost universally associated with the percept—e.g., "old tattered, dirty scarecrow," dead things (human, animal, plant), "dying flower," ragged worn-out things, person crying, "wolf howling at night," coffin, "leaves falling in the snow." Cut-off: one.

N.B.: If such a percept also qualifies for scoring under Frightening R or Mutilation R, it is scored under whichever of these indicators seems dominant but never under more than one of the three, in order to avoid overlap with indicator 3 in this category.

3. *Sum of dysphoric responses in other categories:* Specifically, sum Frightening-Weird R (indicator 4 under General Anxiety) and Mutilation R (indicator 2 under Body Concern). While such responses seem primarily to reflect anxiety, it appears to be anxiety colored by consciously unpleasant, oppressive affect. Cut-off: two.

Hostility

Sex differences may influence this category.

1. *Hostile or destructive M or FM*, as distinguished from merely assertive action. Specific examples are: fighting, arguing, attacking, "dragon ready to strike," humans or animals in move-

ment and described as angry, "cannibals bending over a skull," boy sticking out his tongue, animals pulling a plane apart, tiger holding a rabbit it just caught (i.e., aggression in immediate past). Cut-off: one.

2. *Weapons, destructive implements, and destructive animal or plant parts:* Objects capable of injuring living beings, as Schachtel formulates it, and whose function is primarily destructive in the immediate sense of penetrating, cutting, pounding, imprisoning, punishing, etc. This includes any primarily aggressive implement, hurting aspect of a plant, or harm-inflicting part of an animal as Ad by itself but not as a detail of the whole animal. Bombs are not included unless specific mention is made of their destroying powers. Cut-off: two, or one if vivid (e.g., "destructive looking bomb," "you throw it and stab somebody").

Some examples are: arrow, bullet, battleship, horsewhip, mousetrap, scissors, hammer, drill; claws, thorns, "snake fangs — the way they poison," stingers, sword of swordfish.

3. *Human or animal figures whose harmful or hostile characteristics are detailed by the subject,* as distinguished from merely presumably aggressive figures, such as "devil," without further specification of aggression. Excluded are animals called "wild" without further specification and percepts that qualify for scoring under Hostile M or FM. Acceptable examples are: beetle that stings, "crocodile — they bite people," "evil-looking crab," figures (not in M or FM) described as angry, "insect with crabby features," "widow who jumps and kills you." Cut-off: one.

These responses often are also scored under Frightening R, when the percept would qualify without its harmful characteristics being made explicit or when the aggressive description makes an otherwise relatively innocuous figure quite threatening or terrifying—e.g., "bat that eats people."

4. *Victims of aggression,* when the aggression itself is dwelt on to the extent that identification with the aggressor seems almost as great or greater than with the victim: specification of the aggressor is usual. Some examples are: cat beaten up by dog, "man walking and someone shot him," "leaf torn apart by a cat," "animal killed by somebody." These percepts are often also scored under Mutilation R. Cut-off: one.

5. *Other content associated with hostility,* and not covered by the preceding indicators—e.g., "Indian in warpaint," fort, skull and crossbones, battlefield, punching bag, reference to killing. Cut-off: one.

Dependency Longings

1. *M or FM concerned with getting food or eating*—e.g., cooking, drinking, pulling or sniffing food, "seal begging for fish," diving for fish. Cut-off: one.

2. *M or FM concerned with passive gratification, being cared for* — e.g., "little cats hanging off a big one," "baby grasshopper coming out of nest," "man lying in hammock." It does not include figures merely sitting or lying. Cut-off: one.

3. *Food percepts* – e.g., ice cream, jello, "roast beef," "lobster meat." Cut-off: one.

4. *Other oral activities or content,* not included in the preceding dependency indicators. Examples may be divided into two classes:

a) Responses overtly concerned with the mouth: Hd or Ad consisting of mouth only, or if much talk about mouth—"crab because it has so many mouths," alligator or crocodile with mouth open (but no other animal), M or FM with sole activity described as "opening his mouth," dragon shooting fire from mouth, humans spitting at each other, tongue, teeth, references (not in M or FM) to biting, stinging, eating.

b) Content with implications of food-taking: fat cook, chef, reference to "fat stomach," cannibals, "looks like he's a sloppy eater," reference to claws used for food getting, "emblem of a milk truck," "flower eaten by bugs," "where baby cow gets milk," implements used for eating or preparing food. Cut-off: two, or one if vivid.

5. *Other content reflecting dependent longings and concern with passive gratification,* not covered by the preceding dependency indicators. Cut-off: one, (a) or (b) or (c).

a) "Baby" humans or animals: Figures definitely younger than the subject, as distinguished from those of about the equivalent stage of childhood. Acceptable examples are baby, baby duck, cub, "little" lamb or puppy or kitten; but not lamb, kitten, or puppy without mention of youth or size, since these are often used as generic terms by and to children. This indicator was not used for adolescents because of its possible connection with pregnancy fantasies at that age.

b) References to Christmas, Santa Claus, the Easter Bunny, birthday celebrations, and similar cultural symbols of giving to children and indulging them.

c) Presumptive security symbols, such as homes, nests, teepees, cabins, "caves to hibernate in." "House" without further qualification is not used.

Constraint in Interpersonal Relations

No new responses added during the inquiry in low-R records are counted in this category, except for the one feeling-content indicator, Frightening Human Figures; that is, what the subject produces on his first exposure to the blots is considered more pertinent to estimating the degree of his interpersonal constraint than is his subsequently expanded record.

1. *Shading per cent:* Proportion of total R using any type of c, k, or K shading as a main determinant. Cut-off: Q_3.

2. $(Fc + c + C') > (FC + CF + C)$ *by two or more.* An excess of at least two achromatic responses, rather than one, was chosen both to intensify the measure and to lessen the possibilities of scoring mere chance variations. The minimal acceptable ratios are 2:0 and 3:1.

3. *No H or Hd responses in record.* Tendencies to H, such as skeletons for the popular human figures on Card III, are counted as H if they were offered during the first presentation of the card.

4. *Fearful or threatening human figures,* so described or implicit in the cultural attributes of the figure—e.g., witch, monster, ghost, skeletons for popular humans on Card III, "giant chopping a boy," "scarey mask." These percepts are also scored under Frightening R. Cut-off: one.

5. *Hdx for the popular H on Card III,* following Beck's (1950) definition of Hdx. Scored examples are: top half of body, leg, foot or shoe, arm, head.

6. *Absence of popular human figures on Card III.* Hdx and tendencies to P (e.g., skeletons) are ranked with full populars on this item, but emergence of the popular response during the inquiry is not counted as P.

False Maturity Pattern

This category is probably meaningful only in relation to children. It appears to be influenced by sex differences.

The pattern revealed by this measure appears basically to reflect an inhibition of the child's own immediate emotional impulse in the interests of determining what is appropriate or expected by others. It may vary from a rigid self-restraint (e.g., in records with no color) to a sensitive, but overly compliant reaction to his perception of others' needs and wishes (exemplified in records with excessive FC). The syndrome involved may thus be an expression of the child's precocious adoption of a role of responsibility and of an attitude that he must consider the demands of the interpersonal situation before allowing himself to express his own feelings or satisfy his own needs—much in the way a responsible adult acts. That the control shown by these children is not in fact based on a true, if precocious, maturity, is shown by the excessiveness of

TABLE I—Scoring Criteria for the False Maturity Pattern

The false maturity pattern is considered present when a record shows one of the primary indicators accompanied by any one of the secondary indicators checked for it below.

Primary Indicators (all without pure C)	Alternatives among Secondary Indicators						
	Shading $\geqq$65%ile and F-dom'd	$M \geqq 2$ and F% > Median	$M > 2$ Sum C plus other* secondary indicators	F% $\geqq$ 65th %ile	F-dom'd shading present	$c > C$ by 2 or more	$M > FM$
I. Strong FC dominance (e.g., 4:1, 3:0, 6:2)	✓		✓	✓	✓	✓	✓
II. Mild FC dominance (e.g., 2:0, 5:3, 3:1)	✓		✓	✓			
III. Tentative FC dom. (viz., 1:0)	✓		✓				
IV. No color present	✓	✓					

* Namely, $M > 2$ Sum C accompanied (a) by shading $\geqq$65th percentile of available samples at appropriate age level and form-dominated, or (b) by F%>median of the available samples at appropriate age level, or (c) by any two of the last three indicators above.

the control itself, the overcompliance, and the concomitant lack of flexibility, spontaneity, and ease. In the children of multiple sclerotics, as had been predicted, this pattern proved to be significantly related to persisting high levels of dependency needs. Such a relationship was not evident in the control children.

The indicators listed below should be considered in conjunction with Table I. The quartiles and percentiles referred to were based on frequency distributions of the variable in the combined experimental and control samples of the original study.

1. *No pure C.* Presence of crude color in a record, even as an additional, automatically eliminates the record from consideration in this category.

2. *FC dominance over CF.* Cases where the majority of the FC represent poor form are excluded. The degree of FC dominance is taken as an indication of how much supplementary evidence of cautious control should be required for a subject to be considered overcontrolled and precociously mature. Both are specified in relation to one another in Table I. Additional color responses are given as much weight as main color responses.

3. *No color responses in record,* in free association or inquiry. Since absence of color in itself does not necessarily imply control of responsiveness (10, 14), it is necessary to have other evidence that would suggest a relatively high level of ego organization and defensive or avoidant reaction to emotional stimuli, as distinguished from either brittle rigidity of control or primitive acting out of emotional impulses with minimal ego participation. Such supporting evidence was thought to lie in the presence of a significant degree of differentiated shading or in a minimum of two M plus above average F% — both of these measures are discussed below.

4. *Shading R (c, k, K), the majority of which are form-dominated.* Two levels of stringency seem indicated: a) when used as a main support to other findings Shading R percent must equal or exceed the 65th percentile (as a point of beyond-average, but not necessarily extreme, deviation) of Shading Per Cent frequencies in the available samples. b) When used only as supplementary support to already strong evidence of overcontrol, mere presence of differentiated shading is taken as an indication of the child's capacity for such reactions.

5. *$M > 2$ Sum C, plus (a) F% > median of F% frequencies in available samples, or (b) other specified signs of control.* The minimal acceptable M:

Sum C ratios are set at 2:0 and 3:1. Accompanying this ratio, Klopfer suggests an F% greater than 50 for adults; because children generally produce higher F% than adults, the F% medians were derived from the combined samples at each age level in the original study.

6. *F% ≧65th percentile of F% frequencies in available samples,* at appropriate age level.

7. $(Fc + c + C') > (FC + CF + C)$ *by at least two.*

8. *Relative M dominance over FM.* Following Klopfer (7), the minimum acceptable M:FM ratio is 3:2.

REFERENCES

1. Arnaud, Sara H. *Children of multiple sclerotics: Their psychological characteristics.* Unpublished doctoral dissertation, Boston University, 1957. Available in microfilm from University Microfilms. Ann Arbor, Michigan.

2. Arnaud, Sara H. "Some psychological characteristics of children of multiple sclerotics." *Psychosom. Med.*, 1959, *21*, 8-22.

3. Beck, S. J. *Rorschach's test. I. Basic processes.* Second ed. New York: Grune & Stratton, 1950.

4. Cronbach, L. J. "Statistical methods applied to Rorschach scores: a review." *Psychol. Bull.*, 1949, *46*, 393-429.

5. De Vos, G. "A quantitative approach to affective symbolism in Rorschach responses." *J. proj. Tech.*, 1952, *16*, 133-150.

6. Elizur, A. "Content analysis of the Rorschach with regard to anxiety and hostility." *J. proj. Tech.*, 1949, *13*, 247-284.

7. Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., and Holt, R. R. *Developments in the Rorschach technique.* Vol. I. Yonkers-on-Hudson, N. Y.: World Book Company, 1954.

8. Munroe, Ruth L. "Prediction of the adjustment and academic performance of college students by a modification of the Rorschach method." *Appl. Psychol. Monogr.*, 1945, No. 7.

9. Munroe Ruth L. "The inspection technique for the Rorschach protocol." In *Projective Psychology.* (L. E. Abt and L. Bellak (Eds.). New York: Knopf, 1952.

10. Phillips, L., and Smith, J. G. *Rorschach interpretation: Advanced technique.* New York: Grune & Stratton, 1953.

11. Schachtel, E. "The dynamic perception and the symbolism of form, with special reference to the Rorschach test." *Psychiatry*, 1941, *4*, 79-96.

12. Schafer, R. *Psychoanalytic interpretation in Rorschach testing.* New York: Grune & Stratton, 1954.

13. Walker, R. G. "A comparison of clinical manifestations of hostility with Rorschach and MAPS test performance." *J. proj. Tech.*, 1951, *15*, 444-460.

14. Young, R. A., and Higginbotham, S. A. "Behavior checks on the Rorschach method." *Amer. J. Orthopsychiat.*, 1942, *12*, 87-94.

Received February 26, 1959
Revision received June 24, 1959

Repression and Psychopathology[1]

RICHARD H. DANA
University of Nevada

KENNETH CHRISTIANSEN
Stanford University

Clinicians of all theoretical persuasions accept the dictum that repression and psychopathology are related. Freud's theory of repression, based on resistance, postulates that in neurosis the repressed wish exerts pressure on the threshold of consciousness such that eternal vigilance or counter pressure is required to prevent emergence into consciousness (11, 12). Thus, contemporary psychoanalysts believe that "the deeper the repression, the *more* pathogenic the conflict."

In contrast, Tomkins (19, p. 75) has stated that "the deeper the repression, the *less* pathogenic the conflict". Tomkins assumes that personality is a closed system with a finite amount of energy available as units of psychological pressure. A unit of pressure, or a wish, is the product of intensity (*i.e.*, strength) and extensity (*i.e.*, scope). Conflicts are pathogenic when (a) the entire energy of the system is consumed, (b) the opposed pressures are evenly balanced. Tomkins (19) envisions measures derived from the Thematic Apperception Test (TAT) of intensity, extensity, pressure of repressing force, strength of repressing wish, and degree of remoteness. However, neither the pressure of the repressing force nor the pressure of the repressed wish can be measured directly. In fact, any operational separation of repressing force and repressed wish seems unfeasible. In addition, intensity and remoteness are not independent but equivalent, interchangeable terms. The circularity of defining measures in terms of subjective estimates of other measures has obscured development of one measure which can be operationally defined and reliably scored; *i.e.*, remoteness. Remoteness can be considered a measure of repression.

This paper presents a set of reliable scores based on Tomkins' descriptions of remoteness and their relationship to an independent, objective measure of psychopathology, the MMPI.

METHOD

The informal clinical use of TAT indicators of remoteness suggested formalization into the following set of categories:

(a) Object: that toward which the wish of the hero is directed.
  1. Parent or parents.
  2. Parent surrogate: aunt, guardian, teacher, boss, policeman, God, gangster, doctor, spouse, sibling, etc.
  3. Human agency: society, government, law, "people," "them."
  4. Animals and supernatural beings: monsters, witches, demons.
  5. Physical Objects.

(b) Time: the time of occurrence of the action in the picture; if time is not mentioned, the tense of the verb explaining the action *depicted in the picture.*
  1. Present.
  2. Immediate past (within subject's lifetime).
  3. Immediate future (within subject's lifetime).
  4. Remote past.
  5. Remote future.

(c) Setting: the location of the action of the story as depicted in the picture.
  1. Customary habitat.
  2. Other areas or countries.
  3. Other worlds: planets; strange, unnatural places.
  4. Mythology: no location, picture regarded as fable or painting.

---

[1] The authors wish to thank Dr. Silvan S. Tomkins for a critical reading of the manuscript.

5. No story: description or rejection of card.

(d) Level: the plane of psychological function; the amount or degree of rational control of any of the characters in the depicted situation.

1. Rational behavior or thought.
2. Wish: desire for something to occur or change.
3. Memories or daydreams.
4. Nightmares or dreams.
5. Special states: disease, insanity, drunkenness, physical disability, illness (must permeate story; not situational).

(e) Condition: the emotional state of the hero in the situation.

1. No specific state mentioned.
2. Envy, fear, shock, hate, anger, jealousy, grief.
3. Anxiety, frustration, guilt, shame.
4. Fatigue, depression.
5. Destruction, incapacitating emotion.

These categories were made into five point scales with point five indicating the greatest remoteness or distance. For each story a maximum score of 25 may be obtained. Using 20 cards the scores ranged from 100 to 500. It was not intended that these scales have equal intervals since their purpose is to obtain a gross estimate, or index, of remoteness. Adequacy of scale construction was investigated in terms of (a) scorer reliability, (b) scoring category reliability, (c) internal consistency.

The TAT (20 stories) and MMPI data were obtained from 67 female college students, the entire sophomore class at the University of Colorado School of Nursing.[2] Table I presents scorer and scoring category reliability. Reliability was determined by means of per cent of agreement between three scorers[3] using five TAT records (20 stories per record), selected at random (*i.e.*, table of random numbers). Per cent of agreement was chosen as the appropriate reliability statistic for reasons discussed elsewhere (3,17). Agreement among scorers is greater for Setting, Level and Conditions than for Object and Time. However, all figures are 80 per cent or better. This compares favorably with scorer reliability figures of 75 per cent for Rorschach categories (4). There are minimal differences in ambiguity of category definitions. Experience in content analysis does not appreciably affect scoring. That reliable content scoring of TAT protocols can be a clerical process has been previously demonstrated (5,7,8,9).

The problem of internal consistency was approached by comparing remoteness scores from five TAT cards with those scores from the entire 20 cards. This short-form consists of cards 2, 3GF, 4, 6GF, 7GF, and has been empirically evaluated for other TAT scores (6). Table II presents these correlations. The variability of these correlations suggests that (a) the "card pull" or stimulus-value with respect to remoteness categories differs, (b) usual demonstrations of internal consistency by split-half or odd-even techniques would not be meaningful for those categories affected by stimulus values, especially Setting and Object.

MMPI records were scored for the validity and clinical scales. Neurotic triad (Hs, D, Hy) and psychotic triad (Pt, Pa, Sc) scores were determined. Psychopathology was defined in terms of standard scores on the clinical scales, excluding Mf. *Ss* with scores of under 60 composed Group 1 (N=22); Group 2 contained those with scores between 60 and 70 (N=27); Group 3 were those above 70 (N=18).

---

[2] The TAT and MMPI data were collected jointly by the senior author and Dr. Lewis Bernstein for purposes of another study (2).

[3] All TAT records were scored by the junior author, Scorer A. In Table I, Scorer B is the senior author; Scorer C is Buell Goocher whose assistance is gratefully acknowledged. Scorers A and C had no previous experience in TAT content analysis.

TABLE I — Scorer and Scoring Category Reliability (per cent of agreement) for Three Scorers and Five Scoring Categories on Five TAT Cards

Scorer	Category					
	Object	Time	Setting	Level	Conditions	All
A, B	87	85	99	92	93	91.4
A, C	81	92	98	89	86	89.2
B, C	80	82	98	90	91	88.2
A, B, C	82.6	86.3	98.3	90.3	90	89.5

TABLE II — Product-moment Correlations Between Remoteness Index Scores for 67 *Ss* on 5 and 20 TAT Cards

RI Category	Correlation
Object	.26*
Time	.86**
Setting	.16
Level	.57**
Conditions	.68**
Total Index	.51**

* Significant at <.05 level.
** Significant at <.01 level.

RESULTS

Table III presents Remoteness Index scores, neurotic triad, and psychotic triad scores and t-test comparisons for the three MMPI groups. Remoteness Index scores correlate .42 with neurotic triad scores and .43 with psychotic triad scores for the 67 *Ss* (significant at <.01 level). These results suggest that as MMPI defined psychopathology increases so does the magnitude of the Remoteness Index. It will be noted that differences between Groups 1 and 2 are not of comparable magnitude with differences between Groups 2 and 3. This is in accord with the statistical meaning of the standard deviation MMPI scores.

DISCUSSION

In evaluating these results several problems must be considered: (a) the Remoteness Index as a measure of repression, (b) comparison with other measures of repression, (c) cross-validation.

Remoteness, as scored in TAT protocols, is thought to be a measure of the distance from awareness of any disturbing material. That the TAT yields material from both "conscious" and "unconscious" sources (*i.e.*, at various levels or degrees of awareness) is not currently challenged. That these levels of awareness can be experimentally separated in terms of distance from the stimulus characteristics of the TAT card is an assumption. Clearly the resolution of this dilemma lies in research attention to construct validation as has recently occurred with dependence and anxiety (1,15). Repression has been defined in almost as many ways as there are interested investigators. Examples include recall of experience or selective memory studies (18,20), complexes suggested under hypnosis (14), success and failure experiences (13). Two different MMPI techniques have been used (a)

TABLE III — t-test Comparisons of MMPI Groups for Remoteness Index (RI), N Triad, and P Triad Mean Scores

Groups Compared	RI	t	N triad	t	P triad	t
1	164	1.73	51	.86	48	2.00*
2	171		54		50	
1	164	3.18**	51	2.25*	48	4.56**
3	185		62		54	
2	171	2.56**	54	2.04*	50	3.48**
3	185		62		54	

* Significant at the <.05 level.
** Significant at the <.01 level.

Hy-Pt Index (10), (b) discrepancy between MMPI ratings and Interpersonal System estimates (16). The failure of this latter demonstration to cross-validate suggests that the definitional problem is not easily resolved. Thus, the assumed equivalence of remoteness and repression has the same tentative operational status as does any of the above definitions *in the absence of construct validation studies.*

Cross-validation of the Remoteness Index should involve two processes (a) replication using more clearly distinct MMPI groups matched on relevent background variables, (b) comparison of MMPI defined "normal" groups with matched out-patient and hospital groups.

Although this study supports the psychoanalytic contention that repression and psychopathology are related, this may hold only for "normal" college women. The present purpose is to present a reliable method for measuring remoteness and one validation study. The Remoteness Index may have potential usefulness in clinical situations where objective appraisal of the extent of repression is a necessary datum for treatment planning. The development of objective measures of defense mechanisms is part of the current concern with establishing clinical psychology in terms of verifiable procedure.

SUMMARY

Theoretical controversy over the relationship of repression to psychopathology led to a definition of repression in terms of TAT remoteness. TAT indicators of remoteness were formalized into five scales: (a) Object (b) Time (c) Setting (d) Level (e) Conditions. These scales were reliably applied by relatively untrained scorers.

Psychopathology was defined by the magnitude of MMPI standard scores on clinical scales. Groups of sophomore college women were formed in terms of degree of MMPI psychopathology and their Remoteness Indices (the sum of scores on the five TAT scales) compared statistically. These groups differed significantly in Remoteness Indices in a direction consistent with support of the psychoanalytic proposition that repression and psychopathology are positively correlated. Problems pertaining to definition of repression and to cross-validation were discussed.

REFERENCES

1. Bernadin, A., and Jessor, R. A construct validation of the Edwards Personal Preference Schedule with respect to dependency. *J. consult. Psychol.*, 1957, *21*, 63-67.

2. Bernstein, L. The examiner as an inhibiting factor in clinical testing. *J. consult. Psychol.*, 1956, *20*, 287-290.

3. Dana, R. H. The objectification of projective techniques. *Psychol. Rep.*, 1955, *1*, 93-102. (a)

4. Dana, R. H. Rorschach scorer reliability. *J. clin. Psychol.*, 1955, *11*, 401-403. (b)

5. Dana, R. H. Clinical diagnosis and objective TAT scoring. *J. abnorm. soc. Psychol.*, 1955, *50*, 19-25. (c)

6. Dana, R. H. Selection of abbreviated TAT sets. *J. clin. Psychol.*, 1956, *12*, 36-40. (a)

7. Dana, R. H. Cross-validation of objective TAT scoring. *J. consult. Psychol.*, 1956, *20*, 33-37. (b)

8. Dana, R. H. An application of objective TAT scoring. *J. proj. Tech.*, 1956, *20*, 159-163. (c)

9. Dana, R. H. Norms for three aspects of TAT behavior. *J. gen. Psychol.*, 1957, *57*, 83-89.

10. Eriksen, C. W., and Davids, A. The meaning and validity of the Taylor Anxiety Scale and the Hysteria-Psychasthenia scales from the MMPI. *J. abnorm. soc. Psychol.*, 1955, *50*, 135-137.

11. Fenichel, O. *The Psychoanalytic theory of neurosis.* New York: Norton, 1945.

12. Freud, S. Repression. In *Collected papers. Vol. IV.* London: Hogarth Press, 1953.

13. Glixman, A. F. Recall of completed and uncompleted activities under varying degrees of stress. *J. exp. Psychol.*, 1949, *39*, 281-285.

14. Huston, P. E., Shakow, D., and Erickson, M. H. A study of hypnotically induced complexes by means of the Luria technique. *J. gen. Psychol.*, 1934, *11*, 65-97.

15. Jessor, R., and Hammond, K. Construct validity and the Taylor Anxiety Scale. *Psychol. Bull.*, 1957, *54*, 161-170.

16. LaForge, R., Leary, T. F., Naboisek, H., Coffey, H. S., and Freedman, M. B. The interpersonal dimension of personality: II. An objective study of repression. *J. Personal.*, 1954, *23*, 129-153.

17. Spiegelman, M., Terwilliger, C., and Fearing, F. The reliability of agreement in

content analysis. *J. soc. Psychol.*, 1953, *37*, 175-187.

18. Stagner, R The redintegration of pleasant and unpleasant experiences. *Amer. J. Psychol.*, 1931, *43*, 463-468.

19. Tomkins, S. *The Thematic Apperception Test*. New York: Grune & Stratton, 1947.

20. Wilkerson, F. R., and Cargill, D. W. Repression elicited by story material based on the Oedipus complex. *J. soc. Psychol.*, 1955, *42*, 209-214.

Received March 3, 1959

A Note on Female Blacky Protocols

SIDNEY I. DEAN
Fort Lauderdale, Florida

In a recent article Neuman and Salvatore (1) factor-analyzed the Blacky test in reference to validity. They found that male subjects produced results consistent with psychoanalytic theory; they also found that female subjects produced contradictions which were not readily understood. They suggest that psychoanalytic theory is difficult to apply to females without some artificial straining; and/or, that there is doubt as to whether females can identify with a dog as easily as males can.

These investigators (1, p. 431) state: "An animal that may be more suitable for female use is the cat. Cats have long been associated with supposedly female characteristics, and females may find it easier to identify with a cat family." This nagging little problem recently came to awareness when the author was testing a ten year old girl who was a social isolate. She referred to Blacky throughout the test as "he". She responded to cards XI (love object for females) and X (ego ideal for females) in a consistently masculine manner.

It seemed too easy to assume that this mode of response represented a thoroughgoing masculine identification. After the test proper the author inquired about "him". The girl stated that Blacky sounds like a boy's name. Upon further inquiry she replied with the succinct statement; "dogs are he and cats are her."

The ten year old girl had finally put into words the vague impressions of the author. A check with co-workers revealed ready acceptance of the child's logic. In evaluating the protocol, and disregarding Blacky's being called male, the girl's psychosexual development was not unusual. She did tend to be similar to mother in the attribute of dominance (the girl had lost two fathers to divorce), but this was *not* masculine identification. Reality contact was good, and the girl tested out at high average intelligence.

Two factors seem worthwhile adding to the Neuman and Salvatore (1) discussion. First, they say that dogs may convey masculine characteristics such as aggressiveness. It also seems possible that some females shy away from dogs because of the concept of "bitchiness" (which seems to replace the termagant and shrew designation). Second, if Blacky sounds like a male name, and indeed it seems to, should not a set of cat family counterparts have "Whitey" as the heroine?

Not every testee can be so enlightening in his verbalizations as this ten year old girl; but she should not be considered unique. Further consideration of the projective material elicited from females on the Blacky seems necessary so long as such a confounding factor may exist.

REFERENCE

1. Neuman, G. G., and Salvatore, J. C. The Blacky test and psychoanalytic theory: a factor-analytic approach to validity. *J. proj. Tech.*, 1958, *22*, 427-431.

Received March 13, 1959

The Influence of Chromatic and Achromatic Color in the Rorschach[1]

JOHN E. EXNER, JR.
DePauw University

It has been pointed out by Baughman (1) that there are relatively few studies published in which the stimulus properties of the Rorschach blots have been examined by means of altering one or more of the properties. In a survey of literature pertaining to this problem he cites twenty-five studies in which at least one stimulus property of the blots has been experimentally manipulated. Twenty of these studies are concerned with the effects of chromatic color, while the remaining five attempt evaluation of other stimulus properties. Most of the studies dealing with chromatic color in the Rorschach have been structured to examine the effects of chromatic color on the "classic" color shock signs or on the increase or decrease of frequency of responses to plates VIII, IX, and X. Two of the studies reported by Baughman, those of Crumpton (3) and Grayson (4), deal directly with other influential aspects of chromatic color as it is used in the Rorschach. The results of each suggest that color plays a much more influential role than has been interpreted from the results of the other studies dealing with the same general problem area. Crumpton even suggests that the individual colored cards differ in their stimulus characteristics to such an extent that a reaction to color on one card cannot be given the same interpretation as a similar reaction to a different card.

While the authors of many studies appear to have conclusively demonstrated the uselessness of the concept of color shock, they also seem to have attempted to interpret their results in such a manner as to exclude the importance of color in determining responses. Studies dealing with aspects of color other than those directly related to color shock suggest that these conclusions may be somewhat erroneous and that an attempt to exclude the importance of color in responses may be premature in view of these later results.

This experiment was designed to investigate the effects of achromatic and chromatic color, as a stimulus, on the perceptual and projective processes of the individual as occur in the Rorschach. Three hypotheses were formulated in regard to this problem. They are:

1. Chromatic color has a significant influence on an individual's response to a perception regardless of his conscious awareness of the relation of that color to his response.
2. Achromatic color has a significant influence on an individual's response to a perception regardless of his conscious awareness of the relation of that color to his response.
3. Different chromatic colors have significantly different stimulus characteristics to the degree that an individual's response will be directed, at least in part, by the specific color of the stimulus.

METHOD

Card I of the Rorschach was selected for use in this design. Its selection was based on two considerations. First, its color is completely achromatic. Second, there are at least two common responses to this card which are considered to be popular by most authorities on the test. These responses are: a winged creature, using all or nearly all of the blot; and the human figure, using the center portion of the blot.

---

[1] This article has been based in part on a Ph.D. thesis accepted by the Graduate School of Cornell University accomplished under the direction of F. S. Freeman.

These general responses may be subdivided into five specific responses: a bat, a butterfly, a moth, or a person or the lower half of a person.

Chromatic copies of this card were created using the monochrome-dye coupling method so that the achromatic color was replaced by chromatic color and size, form, background, and shading components were held constant. Three chromatic colors were selected from the chromatic plates of the Rorschach to be used on the experimental cards, one color per card. These colors are the blue from Beck's *D1* area of Card X, the green from Beck's *D1* area of Card IX, and the magenta from Beck's *D13* area of Card X.

Four hundred subjects were selected from the student body of the Rochester Institute of Technology. These students were then divided into four matched groups, one hundred to each group. All of the subjects selected were between the ages of 18 and 25. Each group contained eighty males and twenty females. Matching was made on the basis of the total percentile score on the American Council on Education Psychological Examination. The Cornell Index was administered to each subject prior to the experimental testing in an attempt to avoid using seriously disturbed individuals as subjects.

Each of the four matched groups was assigned one of the cards previously mentioned, so that three of the four groups were assigned one of the experimental chromatic cards each and the fourth, or control group, was assigned the standard achromatic Card I of the Rorschach test. Each subject was shown the card assigned his or her group individually. The administration of the card was preceded by instructions normally used with the Rorschach test, substituting the word card for cards. Prior to the instructions a short statement was made to the effect that the student was a subject in a scientific experiment, the results of which would have no bearing on his status as a student in school. As in standard administration of the Rorschach, a free-association period was followed by an inquiry which employed the use of nonleading questions. Each response plus the inquiry was recorded verbatim. The elapsed time between the presentation of the card and the first response was also recorded.

The responses were scored by the Beck method with the exception of those responses which included animal movement or the use of achromatic color. In these instances, the Klopfer symbols of *FM* and *C'* were used respectively. Statistical analysis of the data was accomplished by using the Chi-square method. Reaction times for each group were compared by use of a *t* test.

RESULTS

A total of 563 responses were given to the four cards used in this investigation. The number of responses given to each card plus the average elapsed time between the presentation of the card and the first response is shown in Table I.

An examination of Table I reveals that the greatest number of responses were given by Group II, to the blue card, significantly more than to either the brown or green cards. It may also be noted that the shortest reaction

TABLE I—Number of Responses Per Group Plus the Average Reaction Times for First Responses

Item	Group I Black Card	Group II Blue Card	Group III Brown Card	Group IV Green Card
Number of Responses	147	166[ab]	128	122
Average Reaction Time	21.3″	15.8″[ab]	24.9″	26.8″

[a] Signifies a significant difference from Group III at the .01 level.
[b] Signifies a significant difference from Group IV at the .01 level.

TABLE II—A Group Breakdown of Responses by Location

Location	Group I Black Card		Group II Blue Card		Group III Brown Card		Group IV Green Card	
	No.	%	No.	%	No.	%	No.	%
Whole	101	.687	86	.518^{acd}	96	.750	98	.803
Large Detail	41	.278	61	.367^{cd}	29	.226	20	.163
Small Detail	5	.034	19	.114^{acd}	3	.023	4	.032
White Space	14	.095^{bcd}	45	.271	26	.203	21	.172

[a] Signifies a significant difference from Group I at the .01 level.
[b] Signifies a significant difference from Group II at the .01 level.
[c] Signifies a significant difference from Group III at the .01 level.
[d] Signifies a significant difference from Group IV at the .01 level.

time, on the average, occurred in this group, significantly less than in either of the other groups using chromatically colored cards. These factors seem to suggest that the blue card was responded to with the least difficulty.

Since there are many factors involved in the scoring of these responses, they will be presented in the three categories generally used when referring to Rorschach responses. The first of these is location. A response breakdown, with reference to location, by groups is shown in Table II. The group percentage of each factor is included in this table for purposes of clarification.

From an examination of Table II it may be noted that the number of whole and small detail responses differs significantly in Group II from all other groups, the former being significantly less, the latter significantly more.[2] It should also be noted that large detail responses given to the blue card are significantly more frequent than to either of the other chromatically colored cards. White space was used significantly less by Group I than by any of the groups responding to chromatically colored cards.

The second factor concerning these responses is determinants. A response breakdown, with reference to determinants, by groups is shown in Table III. The group percentage of each factor is included in this table for purposes of clarification.

From examination of Table III it may be noted that a significantly greater number of human movement responses were given to the blue card. Also, it is worth noting that no significant differences occurred between the groups in relation to animal movement. Possibly the most significant differences occurred in relation to the use of color.

When the number of responses to achromatic color were added to the number of responses to chromatic color, so that Group I could be compared with the other groups, significant differences were noted between Group I and all other groups and between Group II and all other groups, but not between Groups III and IV. When only the responses to chromatic colors were considered, Groups II, III, and IV were found to be significantly different from each other.

Shading components were used significantly more in Group IV than in any other group. Form was used significantly less in Group III than in Groups I and II and significantly less in Group IV than in Group III.

The significant differences noted between the groups in relation to determinants appear closely related to a third factor concerning the re-

---

[2] It should be mentioned that thirteen of the nineteen small detail responses given to the blue card occurred to one specific area and were of like content. Since the Beck method was adopted for scoring locations, this area was scored as *Dd*. Klopfer considers this to be a large detail area. If the location scoring had been accomplished using the Klopfer method, a statistically significant difference at the .01 level would have occurred between Groups I and II with relation to large detail responses. The importance of these responses, however, lies in the content and will be discussed in greater detail in another section.

TABLE III—A Group Breakdown of Responses by Determinants

Determinant	Group I Black Card		Group II Blue Card		Group III Brown Card		Group IV Green Card	
	No.	%	No.	%	No.	%	No.	%
Human Movement	19	.129	40	.241[acd]	14	.109	13	.106
Animal Movement	31	.200	24	.144	16	.125	17	.139
Achromatic Plus Chromatic Color	14	.095[bcd]	44	.265[acd]	57	.445	65	.523
Chromatic Color Only	0		27	.162[cd]	49	.382[bd]	61	.500
Shading, Texture or Vista	25	.170	16	.096	15	.117	29	.237[bc]
Form	69	.469	81	.487	47	.367[abd]	30	.245[abc]

[a] Signifies a significant difference from Group I at the .01 level.
[b] Signifies a significant difference from Group II at the .01 level.
[c] Signifies a significant difference from Group III at the .01 level.
[d] Signifies a significant difference from Group IV at the .01 level.

sponses, the content. A response breakdown, with reference to content, by groups is shown in Table IV. The group percentage of each factor is included in this table for purposes of clarification.

From an examination of Table IV it may be noted that the use of a whole human figure occurred significantly more in response to the blue card but significant differences in the use of human detail were not found between any of the groups. The use of a whole animal occurred significantly more in responses to the achromatic card than to any of the chromatic cards. Animal detail responses occurred most to the blue card, significantly more than to the achromatic card. The large number of botany responses to the brown

TABLE IV—A Group Breakdown of Responses by Content

Content	Group I Black Card		Group II Blue Card		Group III Brown Card		Group IV Green Card	
	No.	%	No.	%	No.	%	No.	%
Human	17	.115	40	.241[acd]	13	.101	14	.114
Human Detail	20	.136	13	.078	11	.085	9	.077
Animal	75	.510[bcd]	34	.204	39	.304	32	.262
Animal Detail	5	.034	28	.168[a]	12	.097	13	.106
Anatomy	1	.006	0		2	.015	0	
Architecture	2	.013	5	.030	1	.007	1	.008
Blood	0		0		1	.007	0	
Botany	0		3	.018	26	.203[ab]	22	.180[ab]
Clothing	1	.006	0		1	.007	0	
Cloud	1	.006	4	.024	0		0	
Emblem	4	.027	6	.036	2	.015	2	.016
Excrement	0		0		1	.007	0	
Food	0		0		2	.015	0	
Fur	0		0		2	.015	0	
Geography	6	.040[b]	0		4	.031	1	.008
Landscape	2	.013	5	.030	7	.054	24	.196[abc]
Nature	0		2	.012	0		0	
Object	3	.020	15	.090[acd]	2	.015	3	.024
Paint	0		0		1	.007	0	
Recreation	1	.006	0		0		0	
Sex	0		1	.006	0		0	
Smoke	2	.013	0		0		0	
Symbolism	1	.006	3	.018	1	.007	0	
Tooth	0		1	.006	0		0	
Water	0		6	.036[ac]	0		1	.008
X-ray	7	.046[bcd]	0		0		0	

[a] Signifies a significant difference from Group I at the .01 level.
[b] Signifies a significant difference from Group II at the .01 level.
[c] Signifies a significant difference from Group III at the .01 level.
[d] Signifies a significant difference from Group IV at the .01 level.

and green cards makes each of these significantly different from Groups I and II but not from each other. A significantly larger number of landscape responses were given to the green card than to any of the others. Water was given as a response in Group II significantly more times than in Groups I or III. A significant number of x-ray responses were given exclusively to the achromatic card.

It would be unrealistic to end an analysis of response content with the material presented in Table IV, as much of that material represents generalized scoring symbols or terms for the contents of a response. In some cases the specificity of content is overlooked for the sake of brief uniformity or an ease of statistical comparison. In Table IV the responses of excrement, fur, tooth, and water point out this specificity. They were listed for lack of a more generalized content category which would cover them adequately. Yet, there are other specific items which are encompassed by the content categories in Table IV which must be mentioned here. It would be impracticable to list all of these items here. Therefore, any specific item, which occurred in at least ten responses, in any group, and is not listed in Table IV, is shown in Table V. The group percentage of each item is included in this table for purposes of clarification.

From examination of Table V it may be noted that the response of a winged creature occurred significantly more times to the achromatic card than to any of the others. This response occurred to the brown and green cards significantly more than to the blue card. These differences are somewhat clarified when the frequencies of bat and butterfly are examined. The response of a bat occurred significantly more times to the achromatic card than to any of the other cards. Its occurrence in Group IV was frequent enough to create a significant difference between the green and blue cards. Eleven of the thirty-four bat responses to the achromatic card included some reference to the coloring of the blot as helpful in identifying it as a bat. One of the ten bat responses to the green card used color in this respect. The response of butterfly occurred less than that of the bat but with sufficient frequency to the achromatic card to create a significant difference between Group I and Group II. Color was not referred to in any butterfly responses.

The response of a bell occurred with considerable frequency to the blue card, significantly more than to any of the other cards. The whole blot was identified as a leaf quite frequently by respondents to the brown and green cards so that each is significantly different from the achromatic and blue cards but not from each other. Color was used in twenty-two of the

TABLE V—A Group Breakdown of Items Not Specified by Content Categories Which Occurred in at Least Ten Responses in One Group

Item	Location	Group I Black Card No.	Group I Black Card %	Group II Blue Card No.	Group II Blue Card %	Group III Brown Card No.	Group III Brown Card %	Group IV Green Card No.	Group IV Green Card %
Winged Creature	(W)	54	.367^{bcd}	4	.024	22	.171^{ab}	25	.204^{ab}
Bat	(W)	34	.238^{bcd}	0		3	.023	10	.081^{ab}
Butterfly	(W)	12	.081^{b}	3	.018	4	.031	5	.040
Whole Woman	(D4)	7	.046	21	.126^{a}	8	.062	9	.077
Bell	(Dd24)	1	.006	13	.078^{acd}	1	.007	0	
Leaf	(W)	0		0		26	.203^{ab}	15	.122^{ab}
Snow	(S)	0		17	.102^{acd}	0		2	.016
Animal Face	(WS)	2	.013	21	.126^{acd}	11	.085^{ab}	4	.032

[a] Signifies a significant difference from Group I at the .01 level.
[b] Signifies a significant difference from Group II at the .01 level.
[c] Signifies a significant difference from Group III at the .01 level.
[d] Signifies a significant difference from Group IV at the .01 level.

twenty-six leaf responses to the brown card, identifying it as a leaf in autumn or fall. Color was used in fourteen of the fifteen leaf responses to the green card, identifying it as having its natural green color. Snow was mentioned in seventeen responses to the blue card, significantly more than in any of the other groups. The achromatic color was used in each of these responses. Chromatic color was used in two of these responses in relation to the snow, mentioning that it suggested coldness.

DISCUSSION

It seems best to first consider the results as they apply to the three hypotheses previously stated. The first of these states: Chromatic color has a significant influence on an individual's response to a perception regardless of his conscious awareness of the relation of that color to his response. The data presented in Tables III, IV, and V seem to give strong evidence in support of this hypothesis. The significant differences between the groups of responses including human movement, a bell, and snow suggest the occurrence of these influences with little or no conscious awareness by the subject of the color since a referral to color was never made in the inquiry. The significant differences between the groups of responses including landscape or botany are of a type which would indicate the occurrence of the influences of chromatic color with a conscious awareness by the subject of the color since color was generally indicated in the inquiry.

The second hypothesis states: Achromatic color has a significant influence on an individual's response to a perception regardless of his conscious awareness of the relation of that color to his response. Two items presented in Table V lend evidence in support of this hypothesis. First, when the coloring of the blot was changed from achromatic to chromatic, the response of a bat occurred far less frequently. In one instance, to the blue card, it did not occur at all. This indicates that the achromatic color plays an important role in the popularity of this response in Rorschach test protocols. In some instances when the bat response was given to the achromatic card, color was mentioned in the inquiry; however this was not the case in the majority of the responses and could only be elicited through a testing of limits process. This suggests that, in the larger number of cases, achromatic color influences this identification with little or no conscious awareness, by the subject, of the achromatic color. The second factor, pertinent to this hypothesis, is the significant number of references to snow in responses to the blue card. In each of these references mention of the whiteness of the card was included but usually only after considerable inquiry. This fact could indicate that the white ground of the card was pertinent to the response but not always in the immediate conscious processes of the individual.

The third hypothesis states: Different chromatic colors have significantly different stimulus characteristics to the degree that an individual's response will be directed, at least in part, by the specific color of the stimulus. Considerable evidence is presented in Tables III, IV, and V to support this hypothesis. First, responses including human movement, a whole female figure, a bell, and snow occurred significantly more times in response to the blue card than to either of the other chromatically colored cards. The response of a bell to Beck's *Dd24* area is possibly one of the most interesting of these. It occurred 13 times in response to the blue card as compared with only once to the achromatic card and once to the brown card and was never given in response to the green card. Color was never mentioned as a factor involved in this percept, yet obviously the stimulus characteristics of the color must have played some role. This seems to indicate the presence of some process below the limen of conscious awareness. It may well be that a similar process creates the frequency of response to Beck's *D1* area on Card X which is also colored blue. It seems realistic to hypothesize that the color in itself has some positive stimulus characteristics which draw the individual to it rather than to another area of the card and thus a response may be forced to this area in preference to others. Second, landscape responses occurred significantly more to the green card than to either of the other chromatically colored cards. Although the leaf responses occurred frequently to both the brown and green cards, the coloring predominantly differentiated these as "autumn" or natural "green" leaves, respectively. Third, the use of form differed significantly in frequency in each of the chromatic cards when compared with each other. It was used most frequently in responses to the blue card and least frequently in responses to the green card. Fourth, the use of chromatic color, as a response determinant, differed significantly in frequency in each of the chromatic cards when compared with each other.

It is difficult to evaluate the results of this experiment in terms of Rorschach testing. Certainly they seem to bear out Crumpton's findings (3) from which she suggested that a reaction to color on one card cannot be given the same interpretation as a similar reaction on a different card. Obviously to attempt a weighing of each colored area of the Rorschach cards could well destroy the quantitative values already established, yet it may be possible that some weighing of certain popular-type responses might be accomplished. For example, the results of this experiment suggest that a *C'* element is almost always included in the response of a bat to Card I. At present we rely on the introspective judgment of the subject as to whether or not this actually does exist. It seems probable that there are instances where the individual may not be aware of its influence or may not be able to articulate this element as being inducive to his interpretation, yet the fact that it does exist is still quite clear. Thus should the *C'* determinant when given by the subject in this response be weighted with the same value given to a *C'* element elicited in a less usual response. This same principle also applies to other determinants. For example, a texture determinant is commonly elicited with the response of a "fur pelt" or "bear rug" to Cards IV or VI. In a quantitative summary these texture responses are considered equally as important as any other texture responses, yet is it realistic to give them this same value?

Critics of this type of logic might well suggest that any "competent" or "experienced" Rorschach examiner does not give the same value to these types of responses as he does to others and therefore to bring up a matter such as this is like "kicking a dead horse." Nevertheless, such a procedure is not so customary among all examiners that it could be considered a "dead" issue. This is probably no more apparent than to the individual teaching the use of the Rorschach who often observes trainees leaping on determinants such as these as being indicative of free-floating anxiety, suppressed affectivity, or unsatiated erotic desires as is often suggested in the literature. Certainly no formal conclusions concerning this issue can be made here. The results of this experiment seem to have pointed out some important information concerning the stimulus characteristics of color and the inadequacy of the introspection-type method of inquiry. Recently, Baughman (2) has suggested a new method of Rorschach inquiry which may under certain circumstances eliminate some of the inadequacies in Rorschach method pointed out by the results of this experiment. However, this can only be decided after considerable evaluation of his method. For the present, the results appear to indicate a need for additional research in this area of identifying particular stimulus characteristics. Since most of the work presently published concerns color in its chromatic form, it is obvious that additional work should be undertaken with other determinants and possibly even with the specific stimulus characteristics of portions of cards.

SUMMARY

Four matched groups, each containing one hundred essentially normal subjects, were used in an investigation concerning the stimulus characteristics of color as applied in projective tests. Card I of the Rorschach and three chromatically colored derivations of it, created by the monochrome-dye coupling method so that size, form, shading, and background were held constant, were used as materials in this study. Each card was assigned to one group and administered to the subjects in that group individually, using the standard Rorschach procedures. The data concerning response location, response determinant, and response content of each group were compared with each of the other groups.

The results suggest that achromatic and chromatic color stimuli have significant influences on an individual's response to a perception regardless of his conscious awareness of the relation of that color to his response. This indicates that there may be a need to formulate better methods of inquiry or establish common interpretations of certain "perceptual" type responses so as to differentiate them from "projective" type responses. The results also indicate that different chromatic colors have significantly different stimulus characteristics thus indicating that there may also be a need to evaluate the present methods of weighing color-influenced responses.

REFERENCES

1. Baughman, E. E. The role of the stimulus in Rorschach responses. *Psychol. Bull.*, 1958, *55*, 121-147.

2. Baughman, E. E. A new method of Rorschach inquiry. *J. proj. Tech.*, 1958, *22*, 381-389.

3. Crumpton, Evelyn. The influence of color on the Rorschach test. *J. proj. Tech.*, 1956, *20*, 150-158.

4. Grayson, H. M. Rorschach productivity and card preferences as influenced by experimental variation of color and shading. *J. proj. Tech.*, 1956, *20*, 288-296.

Received January 28, 1959

Rorschach Responses as Verbal Behavior

Jesse E. Gordon
University of Michigan

This paper attempts to emphasize to Rorschach workers that Rorschach responses are samples of verbal behavior. It is from this verbal behavior that the examiner may *infer* perceptual behavior. However, he gets no direct information about perceptual responses which are, by their nature, strictly private. This has a number of implications.

The most obvious implication concerns the inquiry. Traditionally the inquiry has been conducted in order to discover those aspects of the stimulus situation which have participated in determining the subject's response. The assumptions of such a procedure are 1) Ss do not respond to all the stimulus properties; 2) the selection of properties (or individual differences in readiness to respond to various stimulus properties) is correlated with or predictive of other behaviors or characteristics. For example, Ss who respond to shading, or whose perception of shading participates in determining their associations to the blot, are said to be anxious, sensitive, and inhibited; and 3) Ss report of determinants is an accurate description of the manner in which the stimulus properties have modified his behavior, if the inquiry is conducted "properly." It is probably because of the difficulty in conducting an inquiry "properly" that Baughman (1) has developed his paired-comparisons inquiry method, which largely avoids the reliance on introspective verbal reports.

It is our contention that these assumptions are highly questionable, and unnecessary for Rorschach interpretation. In particular, the introspectionist fallacy of the third assumption is obvious, and without this assumption the two others are of little use in evaluating Rorschach behavior.

We would further suggest that in fact there may be no direct connection between effective stimuli and "personality", and that whatever is valid in Rorschach interpretation may be valid, not because of some association between stimulus properties and feelings, motives, and impulses, but because of the relationship among various antecedent conditions and verbal responses. For example, it may be argued that the reason that shading suggests anxiety is that anxious people tend to be introspective and highly self-oriented, in that they make many responses to such internal stimuli as thoughts and feelings. Such a person has, therefore, had a great deal of practice in making introspective responses, and thus is able readily to identify the shading of the blots as a determinant. The difference between such a person and one who does not report shading may not be that for the latter the shading is ineffective as a stimulus; rather, the difference may be that the latter has had insufficient practice and present motivation to make complete introspective reports and to analyze carefully his internal perceptual processes sufficiently well to *report* shading as a determinant.

If this view is correct, then it suggests that an inquiry must be conducted in as permissive and non-directive a manner as possible, so as to give an S an opportunity to verbalize determinants without making it necessary that he report determinants which the examiner has good reason to think are operating. For example, it may be quite likely that the red color at the bottom of Card II is an important determinant of a response "explosion". The examiner's interest, however, should be directed to whether or not, given an opportunity, S reports this as a determinant. The fact of color as a psychophysical determinant may not be as important as the ability of the subject to verbalize it. It would thus be inappropriate for the examiner to "push" the subject to verbalize this determinant. It is therefore also suggested that Baughman's paired comparison method may eliminate the very source of information—the subject's introspective verbal reports—which is the most important in Rorschach diagnosis. On the other hand, assuming that there is no one-to-one correspondence between actual determinants and verbalized determinants, and further assuming that significant information may be supplied by a knowledge of *both* sets of variables, then Baughman's procedure may offer a valuable supplement to the standard Rorschach method.

A further implication of defining Rorschach responses as verbal rather than directly perceptual is that it implies a broader range of conditions antecedent to a response; it is the inferring of such antecedents which constitutes diagnosis from a Rorschach protocal. Among such antecedents may be listed S's response hierarchy (which includes past practice, drives and reinforcements), his present motivation and set (a function of the examination situation in interaction with response hierarchy), the nature of the stimulus materials to which he is responding, plus a very important class—that of self-responses which may operate as a "filter" between perceptual responses and verbal responses. This "filtering" may be represented not only as introspective ability, but also judgment based on perception of the examination situation. Thus sexual objects and parts may be perceived in the blots, but Ss often do not report them because they feel that, considering the nature of the examiner and the examination situation, such verbal reports would be inappropriate. In fact, it is not the failure to report such percepts which excites the examiner's interest; rather, it is usually the poor social judgment implied when an S spontaneously reports sexual content, with all that such poor social judgment further implies in terms of past socialization experiences, the lack of motivation to conform to social standards, etc., which interests the examiner.

Finally, this interpretation of Rorschach responses suggests a rationale behind the interpretation of scored determinants and may be a source of hypotheses for more precise and adequate interpretations of determinants. It has already been suggested that shading may be primarily an indication of introspective ability and habit, and thus chronic anxiety is inferred. The interpretation of F as reflecting "pure intellectual functioning" may be more reasonable if one supposes that other determinants may be operating in producing the response, but S declines to comment on such determinants or fails to consider them because he feels that they are essentially irrevelant for recognition of objects as objects. This is, of course, an intellectual line of thought. Thus F refers to intellectual activity. Similarly, identification of color as a primary determinant may be an indicator of impulsiveness because S has failed to "filter" his perceptions through judgment, which should tell him that color is not as relevant a criterion as form; most objects can appear to be several different colors, and in fact different representatives of the same class of objects may come in different colors. A more reliable criterion for the identification of objects is form or shape. An S who fails to note this, and so justifies his percept by referring to color without evaluating the adequacy of his verbal justification, may be impulsive and illogical in other, non-Rorschach situations. Another S may have responded to color (or color may have been an important determinant of his response), but he may not verbalize it as a primary determinant because of these considerations. Such an S is therefore less impulsive or illogical. Again, the diagnostically important fact is not that one does not respond to color while the other does; the significance of the response is related to those factors which influence verbal report.

Other determinants and combinations of determinants very similarly may be reinterpreted with reference to verbal reports. Much research will be needed to weigh the contributions of both strictly perceptual and strictly verbal processes in order to arrive at adequate conceptual interpretations of the various Rorschach scoring categories.

REFERENCES

1. Baughman, E. Earl. A new method of Rorschach inquiry. *J. proj. Tech.*, 1958, *22*, 381-389.

Received March 10, 1959

Affective Complexity and Psychotherapy

ALAN F. GREENWALD[1]
Bureau of Naval Personnel, Washington, D.C.[2]

Emotional development and a gain in insight are desired results of psychotherapy. The major attempt of this research is to investigate changes in affect states which may be attributed to psychotherapeutic intervention. It is hoped that the TAT will reflect some of these affective changes, and a rating system has been devised for evaluating the affective components of TAT stories. Briefly, the aspects of emotional change investigated include an analysis of pre-therapy, post-therapy, and follow-up TATs to assess the degree to which associations are relatively devoid of affective tone (and hence possibly indicative of hyperrepressive mechanisms); the frequency of monotonic feelings, both of a predominantly pleasant and unpleasant nature; the manifestation of bi-valent affect with and without attempts at conflict resolution.

The concept of affective complexity has important implications for psychotherapy, particularly as it may represent a dimension of change upon which success and failure cases might systematically differ. As defined by Henry and Neugarten (2):

> Affective complexity is an attribute of the person characterized by both the inner resources and sensitivity which would serve to make him aware of and able to accept emotionally the experiential complexities of life. The person characterized by this attribute . . . is (1) more sensitive to a variety of experiences; (2) able to respond to other people and other ideas different from his own, rather than reacting against them; (3) able to accept differences as natural rather than as a threat; (4) able to have confidence in his own judgment: (5) able to integrate into his own personality the emotional residues of his experiences in guiding his own behavior; and (6) able to tolerate wider ranges of personal inconsistencies.

The effects of psychotherapeutic intervention upon affective complexity, as reflected in the TAT, will be analyzed in accordance with an original rating system which subsequently will be discussed in more detail.

INITIAL PROCEDURES, THEORETICAL FRAMEWORK, AND SOURCE OF DATA

A rating system has been devised to assess the complexity *and* emotional quality of TAT associations. "Affective complexity" refers to the existence of at least two divergent affect states about a single object in a TAT story.

These ratings represent the variety of affective responses which may be found in a TAT story. Affect states may be simple or complex, pleasant, unpleasant, or an admixture.

Rating

0 *Affective inhibition*. Story is confined to colorless description of the stimulus situation. No affect or feelings expressed in story. The personality picture is possibly one of constriction, isolation, rigidity, self-deprivation, and hampered productive capacity.

1+ *Monotonic positive affect*. Affect expressed is pleasant, positive. Focus of feelings or attitudes is entirely pleasurable. No bi-valence or negative affect expressed. Affect is simple, nonoffensive. Personality picture also may be one of constriction, although not as severe as that suggested by an affectless production.

1— *Monotonic negative affect*. Predominant mood is negative, painful and/or depressed. Feelings or attitudes focus on negative aspects of story-character or event. No bi-valence or positive affect expressed in story. TAT manifestations of direct or indirect aggression may take either an intropunitive or extrapunitive form. Personality picture may be one of depression, hostility.

---

[1] This is a condensation of a dissertation done at the University of Chicago in partial fulfillment of requirements for the Ph.D.

[2] LTJG, MSC, USN. The opinions expressed herein are those of the author and do not constitute the official views of the Navy Department or of the Department of Defense.

2. *Bi-valent affect.* Affects with divergent qualities of attraction—avoidance, but with no movement toward conflict resolution. Complex, fluctuating emotional attitudes, vascillating moods attributed to story characters.
3. *Bi-valent affect with controlled resolutions indicated.* Affects with divergent qualities of attraction—avoidance are expressed in the story, with the outcome reflecting resolution of conflict through character's decisive action. Fantasy is constructive in contributing to a realistic outlook. This is the most adaptive and efficiently complex pattern in which there is flexibility of thought and action along with sensitivity to intricate object relationships.

The theoretical differences in complexity are particularly salient between 2 and 3 ratings on the one hand and 0, 1+, and 1− ratings on the other. The ratings of 0, 1+, and 1− indicate simple forms of affect expression, while complex affect states are represented by ratings of 2 and 3. No assumptions are made as to differences in the complexity level of stories rated 1+ and 1−.

Story ratings are derived from the free-association rather than the inquiry material. This is because many subjects seem to feel "pressured" in the inquiry toward a particular kind of response by the examiner. Hence, although useful dynamic information is obtained from the inquiry, it is not considered in the scoring.

The rating of each story is based on the most complex affect expressed therein. In cases where the subject reveals monotonic feelings toward one element of the stimulus situation and expresses bi-valent affect toward another element of the same situation, the rating of the more complex affect state would be affixed to the story. The variation in responses would be evaluated qualitatively, of course, but the rule for scoring is that *the rating of any story will be based on the most complex affect state expressed therein.*

Affectively complex responses do not have to relate to the same time period; i.e., bi-valent feelings may be expressed in different time referents—as in the past and present tense. Thus, "At first he hated to practice, but now enjoys it . . . " would fall under the heading of an affectively complex response.

Tacked-on mystical outcomes should be distinguished from genuine conflict resolution. The decision as to whether an outcome is derived from immature, magical thinking is not altogether intuitive. "Good" outcomes suddenly offered in the midst of confusion, which do not logically follow the content-flow, are suspect. An example is the classic fairy-tale ending, " . . . they lived happily ever after," in the face of numerous conflicts and hazards and in the absence of goal-oriented behavior. Stories in which such a condition exists would not be given a rating of "3", since there are no explicit attempts at conflict resolution.

By selecting to record the most complex affect states displayed, we recognize the most sensitive reaction-potential shown by the subject and acknowledge greater openness to experience than otherwise might be surmised. The rationale for this rating system is summed up aptly by Henry and Shlien (3), who already have reported on its use:

> The Affective Complexity Score describes the presence, in a single TAT story, of at least two affect states about a single object which are divergent or contradictory. It will be apparent that we are here using as a model a concept of psychosexual development. This model, in its most primitive form, refers to the development of the child from monolithic positive affect toward a mother to the realization that both good and bad, positive and negative attributes can exist in the same person. We take as less advanced, and thus in the adolescent or adult, less desirable, the tendency to assume an individual person to be entirely of one affect quality. Failure to recognize the presence of contradictory at-

tributes in a single object, we take as suggestive of development hazards. In this instance, we would anticipate a tendency to suppress either the positive or negative attribute and thus to continue seeing the object as all good or all bad.

Extreme upper and lower ranges of affective complexity probably contraindicate successful adjustment. Henry and Shlien (3) concur in this view and state:

> The uppermost ranges of affective complexity may present the individual with such degrees of emotional inconsistency that he will be unable to resolve them into an overt pattern of some consistency. In the lower ranges, the degree of stereotypy would suggest an inability to adapt to changing circumstances.

As a result of successful psychotherapy, it is anticipated that suppressed or repressed affect will be liberated. This greater availability and range of affect should be reflected in the more frequent occurrence of complex affect states (stories rated "2" and "3") in post-therapy TAT stories.

Both the therapy and control groups were tested on three different occasions:

1. *Pre-therapy TAT*. The first TAT was administered as soon after a preliminary interview as practicable and prior to the first counseling appointment.

2. *Post-therapy TAT*. The second administration of the same TAT series was made at the conclusion of therapy.

3. *Follow-up TAT*. Between six months and one year after therapy was terminated, the TAT again was administered.

Control group subjects were tested at approximately the same time intervals as the persons to whom they were equated in the therapy group. Twenty TAT cards were administered to each subject: 1, 2, 3BM, 4, 5, 6BM, 7BM, 8BM, 9GF, 10, 11, 12M, 13MF, 14, 15, 16, 17BM, 18BM, 19 and 20.

The therapy group was comprised of twenty clients of the University of Chicago Counseling Center. They were randomly selected from the files of adult clients who had agreed to participate in research being conducted at the Counseling Center and who had completed the series of pre-therapy, post-therapy, and follow-up TATs. There were ten men and ten women. Ten were students at the University of Chicago, while ten were non-student residents of the Greater Chicago area. The average age was 28, with a range of 21-40 years. This group averaged 31 interviews, with a range of 6-64. The average (mean) number of weeks spent in therapy was also 31, with a range of 4-91 weeks.

The twenty control group subjects were selected from persons answering a call from the Counseling Center for volunteers to participate in psychological research. They were matched as nearly as possible with the therapy group for sex, age, and student-non-student status. Their only contacts with the Counseling Center occurred during the periods in which the tests were administered. Control group subjects were tested at approximately the same intervals of time as the persons with whom they were matched in the therapy group.

RESULTS AND DISCUSSION

Reliability of story ratings. Two different measures of reliability were obtained. First, interjudge reliability was measured by having two judges independently rate the affective qualities of 330 TAT stories given by thirty subjects. Out of the 330 "blind" ratings, there were 48 disagreements. Individual story scores were the items correlated, and the product-moment correlation between the two judges' ratings was .78.

Henry and Shlien (3), who have utilized this rating system, also report that it has "a high degree of reliability when rerated by two different raters."

One judge evaluated 421 stories twice without any knowledge of the subjects. Approximately 12 months elapsed between the first and second assessments. There was 77 per cent agreement between these story ratings, and in 98 per cent of the observed disagreements, there was only one interval's difference between the first and second rating. The product-moment correlation between one judge's first and second ratings was .84.

To determine whether affective valence and complexity change from one TAT administration to another, the changes in the control group's affective ratings were evaluated for significance. Readministration of the TAT series at no time produced significant differences in the affective scores of the control group: i.e., different affect ratings tended to occur with the same relative frequency on initial and subsequent tests.

Three of the five affective scores of the therapy group changed significantly between the pre- and post-therapy testings. The post-therapy TATs of the therapy group reflect significantly more of a generally pleasant, cheerful, optimistic mood and significantly less of a painful and/or depressed mood than do the pre-therapy tests. This does not represent a change in complexity.

A significant post-therapy increase in the number of stories rated 3 indicates that there is more complex, divergent affect expressed with story action aimed at resolution. As observed in the TAT, post-therapy affect-states are more complex and/or more positively toned than those found in the pre-therapy testing.

The significant increase in expression of pleasant mood-tone and decrease in negative feelings also shows up in the follow-up test when compared with the pre-therapy TATs. None of the other changes in the pre-therapy - follow-up comparisons are significant.

The post-therapy gain in affective complexity is greatest. Although there is no significant difference between post-therapy and follow-up affective complexity, there appears to be a slight reduction of this effect with the passage of time away from the therapist.

Three of the pre-therapy affective scores of the therapy group are significantly different from those of the control group. The controls tend to reflect significantly more cheerful, predominantly pleasant mood tone and significantly less negative affect than does the therapy group on the pretest. The controls also show a greater number of complex, bi-valent affect states with resolute action on the pre-therapy TATs than does the therapy group.

The post-therapy test comparisons show that the mean affective scores for both groups are much more similar at this juncture than they were on the pre-therapy TATs. There is a decrease in the amount of negative affect expressed by the therapy group and bi-valent affect states occur more frequently, suggesting more complex emotional responsiveness.

Again in the follow-up TAT comparisons there are two differences approaching significance between the therapy and control groups. These differences are in the number of stories with monotonic feelings of a predominantly pleasant nature and in those with resolution of bi-valent affect. Although the obtained t is not significant at the .05 level, the reduction of pleasurable feelings and increase in monotonic feelings of an unpleasant nature in the therapy group's protocols has been shown already. Yet there is greater correspondence between therapy and control groups' post-therapy and follow-up TAT affect than there is in their pre-therapy stories.

Counselor ratings of the outcome of therapy were available for eighteen members of the therapy group. In evaluating the degree to which psychotherapy was successful, the counselor had a fairly wide latitude. A nine-point scale was used, with the upper end (rating of 9) assigned to the most successful cases and the lower end (rating of 1) assigned to those persons whom the counselors judged to benefit least from therapy. On the basis of his counselor's evaluation, each client was placed at some point along this continuum of therapeutic success. The mean outcome rating was 6.57. Each therapy case was classified as either a high or low success depending on whether its rating fell above or below the mean. Those persons for whom therapeutic outcome was rated 7-9 fell into the former category, while cases rated 1-6 in outcome comprised the latter grouping (4).

The high success and low success subgroups were comprised of nine persons each. Two therapy cases had to be excluded because counselor ratings of outcome were unavailable. All nine of the cases rated highly successful had had at least twenty interviews, and only one had had less than thirty.

Eight of the nine persons comprising the low success subgroup had had less than twenty interviews, the ninth having had twenty three.

Table I shows that there are no significant differences between the pre-therapy TAT ratings of the high success and low success cases. The various forms of affect expression in pre-therapy tests occur with the same relative frequency among the high and low success cases.

The cases judged to be highly successful produced a significantly greater number of complex affect states in the post-therapy TATs than did the low success cases. The post-therapy comparisons of TAT ratings are depicted in Table II.

In the follow-up comparisons, shown in Table III, the high success cases exhibit significantly more affective complexity with resolution. The low successes manifest more bi-valent affect without concomitant resolution. There is also a greater occurrence of predominantly unpleasant, negative mood among the low success cases.

There are some striking differences between pre-therapy, post-therapy, and follow-up TAT ratings of the high success subgroup. Predominantly unpleasant, negative moods occurred more frequently in pre-therapy stories, while more manifestations of pre-

TABLE I – Comparison of Pre-Therapy TAT Ratings of High and Low Success Cases

Story rating	High success group mean	Low success group mean	Mean difference	Estimate of variance	t	P
1+	1.56	2.44	.88	2.15	1.28	$>.10$
1−	8.44	9.00	.56	1.42	.56	$>.10$
2	7.00	5.22	−1.78	5.34	−1.63	$>.10$
3	2.33	2.44	.11	2.10	.05	$>.50$

TABLE II – Comparison of Post-Therapy TAT Ratings of High and Low Success Cases

Story rating	High success group mean	Low success group mean	Mean difference	Estimate of variance	t	P
1+	3.22	4.83	1.67	1.66	2.78	$<.02$
1−	3.56	5.11	1.55	1.83	2.38	$>.05$
2	7.33	6.22	−1.11	2.54	−1.48	$>.10$
3	5.44	3.11	−2.33	3.19	−2.77	$<.02$

TABLE III – Comparison of Follow-up TAT Ratings of High and Low Success Cases

Story rating	High success group mean	Low success group mean	Mean difference	Estimate of variance	t	P
1+	3.78	2.44	−1.34	2.20	−1.94	$>.05$
1−	4.78	6.78	2.00	1.72	3.23	$<.01$
2	5.78	7.56	1.78	2.44	2.44	$<.05$
3	5.11	2.33	−2.78	2.45	−3.81	$<.01$

dominantly pleasant, positive mood are found in follow-up stories.

Perhaps of greatest significance are the differences between therapy cases judged as high and low successes by their therapists. Although there were no significant differences between their pre-therapy TAT ratings, subsequent tests revealed several interesting developments. Cases judged to be highly successful produced a significantly greater number of complex affective responses in the post-therapy TATs than did the low success cases. In the follow-up comparisons, the high success cases continued to manifest a greater number of complex affect states with conflict resolution than did the low success cases. Both high and low successes showed a sharp post-therapy decline in the number of stories reflecting monotonic negative affect. This latter measure apparently does not discriminate effectively between therapist-rated high and low successes.

It is our contention that affective complexity, as it is related to the acquisition of insight and the economy of defenses, is symptomatic of therapeutic gain. We infer the state and economy of one's defenses from his test behavior with the full realization that projective tests cannot supply all pertinent statistics about the subject, but we can accomplish oblique measurements of the story teller's attitudes and affects. When a person denies, represses, or in some other way defends himself against perceived threat, he cannot react as effectively as he might were he reacting to the total situation. With increasing self-awareness, less psychic energy must be diverted in defense of the ego and, hence, more vitality is available for coping with the external world.

SUMMARY

Changes in the form-level of affect states expressed in pre-therapy, post-therapy, and follow-up stories were analyzed using an original rating system. Subjects were 20 clients of the Counseling Center of the University of Chicago and a control group of 20 persons matched as nearly as possible with the therapy group.

On the basis of therapists' ratings of therapeutic success, the client group was divided into high- and low-success cases. A comparison was made to determine whether there was any difference in their TAT ratings prior to or after therapy. Similar comparisons were made between the therapy group and the controls.

Readministration of the TAT produced no significant changes in the controls' pattern of affective responses.

There was greater similarity between the TAT ratings of the therapy and control groups on the post-therapy and follow-up TATs than there was in the pre-therapy tests.

After psychotherapy was terminated, the therapy group showed:

(a) A significant increase in the frequency of positively toned affect manifested in the TAT.

(b) A concomitant decrease in the frequency of negatively toned emotional responses to the TAT.

(c) An increase in the number of complex affect states expressed in TAT stories.

There were no significant differences between the pre-therapy TAT ratings of the high- and low-success cases.

The high successes demonstrated an increased capacity for complex emotional expression on the post-therapy and follow-up TATs. This change was not observed among the low successes. There were significantly more post-therapy TAT stories characterized by expression of monotonic affect among the low successes than among the high successes.

From an analysis of the changes in TAT ratings of the therapy group, it appears that cases judged to be highly successful by their therapists spend more time in treatment and demonstrate a greater capacity for complex

emotional expression after therapy than do low-success cases.

REFERENCES

1. Greenwald, A. F. Affective complexity and psychotherapy. Unpublished doctoral dissertation, University of Chicago, 1959.

2. Henry, W. E., and Neugarten, Bernice. Affective complexity and role perceptions: some suggestions for a conceptual framework for the study of adult personality. Paper read at National Institute of Mental Health, Bethesda, Md., April, 1955.

3. Henry, W. E., and Shlien, J. M. Affective complexity and psychotherapy: some comparisons of time-limited and unlimited treatment. *J. proj. Tech.*, 1958, *22*, 153-162.

4. Rogers, C. R., and Dymond, Rosalind F. (Eds.) *Psychotherapy and personality change.* Chicago: University of Chicago Press, 1954.

Received May 7, 1959

Rorschach Genetic-Level and Mental Disorder[1]

DAVID LEVINE
University of Nebraska

Within the past decade an increasing number of studies, most of them originating at Clark University, have attempted to apply a systematic theoretical framework — one which combined Psychoanalysis and Werner's Genetic Psychology — to the task of explaining a wide range of human behavior. The major tenets of this framework are first "that wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration," (9) and secondly, that much deviant human behavior can be explained in terms of the well-known concepts regression and fixation. Thus, features of a genetically earlier period characterize significant aspects of the deviant individual's psychological functioning (2).

A significant amount of empirical support for this theoretical position has been amassed by psychologists using the Rorschach as a measure of ego development. Hemmendinger (3), for example, was able to demonstrate, in children from the ages of three to eleven, the developmental process of increasing differentiation and integration which is central to Werner's theoretical position. Friedman (2) found that "schizophrenic patients, in the structural aspects of their perception, function at a genetically lower level, similar to, but not identical with, that of young children." Becker (1) reported a correlation of —.64 between the scores of schizophrenics on the Elgin Prognostic Scale and those on the scale he devised for reflecting the genetic level of a patient's Rorschach responses. Wilensky (10) has found a significant relationship between Becker's genetic-level score, social participation and hospital adjustment of schizophrenics.

These consistent findings concerning schizophrenic patients are supported by analogous results with mental defectives, organics, and normals described by Lane (4), Pena, (6), Rosenblatt and Solomon, (8), and Werner (9), indicating that the Rorschach genetic-level score is related to an important dimension of personality, one which might be termed *general level of psychological maturity*. If this is so, this variable should be of prognostic value. However, to date, no studies have been reported which test the prognostic significance of the genetic level score. The present study, then, is an attempt to test the possibility that the Rorschach genetic level score may be of value in predicting the course of serious mental disorders. The confirmation of this possibility would have implications not only for the prognostic use of the Rorschach, which has been challenged by Zubin and Windle (11), but would also furnish further support for the application of this systematic theoretical framework to the Rorschach and for the understanding of serious mental disorders.

The present study, then, was designed to furnish confirmation for the position that the Rorschach genetic-level score is related to the general level of psychological maturity, defining maturity, for the purposes of this study, as the ability of a schizophrenic patient to overcome his psychotic symptoms to the extent that the hospital staff will recommend discharge. More specifically, our hypothesis states that there is a significant positive relationship between a patient's Rorschach genetic-level score at time of his admission to a mental hospital and his hospital status one year later.

---

[1] This study was started as an Individual Hospital Project of the Veterans Administration Psychiatric Evaluation Project which is directed by Richard L. Jenkins. It was carried to completion with support furnished by the Research Council, University of Nebraska. The cooperation of Herman Efron and Stan Augenstein is warmly acknowledged.

METHOD

This investigation was instituted as part of the Veterans Administration Psychiatric Evaluation Project, a study whose major aim is an exploration of the relative therapeutic effectiveness resulting from differing architectural designs and staffing patterns in neuropsychiatric hospitals.[2] Although a detailed discussion of this project is unnecessary here, those aspects of the methodology which are relevant follow:

Beginning with September 10, 1956, all male patients under 60 years of age with a functional psychosis (as defined by the Diagnostic Statistical Manual of the American Psychiatric Association) who were neither in remission nor diagnosed as actively tubercular were selectetd from the current admissions to a V.A. Neuropsychiatric Hospital. If it were determined during the formal staff conference that the patient did not have an active functional psychosis at the time of admission he was dropped from the study. No subject was admitted to the study who had been a psychiatric patient in any hospital for ninety days or longer during the preceding six months. The first five patients admitted each week who fulfilled the criteria were selected for study until a sample of one hundred and twenty patients was collected.

Within three weeks of admission each subject was given the Rorschach by one of six psychologists: five V.A. staff psychologists and an advanced trainee. The protocols were scored independently by two advanced graduate students. In order to check reliability, the Rorschachs of twenty patients were scored separately by both judges. After the Rorschachs were scored, each response was assigned a genetic-level score based on Becker's criteria.

For his system, Becker (1), following Werner (9) and Friedman (2), constructed a six point scale on which each Rorschach response could be located in terms of its genetic level. Thus, for example, a response to the entire card in a global, undifferentiated manner (an amorphous Whole response: Wa) which is most commonly found in four year old children according to Hemmendinger (3), would receive a genetic-level score of "1". Illustrative of this kind of Wa response are "Black paint" to Card I or "Fire and Smoke" to Card II. DW, W—, and Contaminated Responses are also scored "1". Amorphous responses to Usual Details (Da) receive a scale score of "2" since they reflect the attempted differentiation of the stimulus into parts. Vague responses to the whole blot (maps, designs, etc.) are scored "3", because they reflect some "integrative effort with consideration of the formal aspects of the blot." Popular responses or responses in which the form generally conforms to the blot area are level "4". When two or more areas are articulated with "good form" a score of "5" is assigned; whereas, when an unbroken blot (I, IV, V, VI, IX) is "perceptually articulated and reintegrated into a good form percept," the highest genetic level score of "6" is attained. More detailed discussions of this and closely related scoring systems have been published by Becker (1), Friedman (2), Phillips, and Waldman (in press).

After the separate responses were each assigned a genetic-level score, a mean-genetic-level score was obtained for each subject by adding the scores and dividing by the total number of responses. The reliability coefficient of

---

[2] For further information concerning the Veterans Administration Psychiatric Evaluation Project, contact: Richard L. Jenkins, M.D., Veterans Administration Hospital, 2650 Wisconsin Avenue, N.W., Washington 7, D.C.

TABLE I—Data Comparing Patients Who Have Been Discharged During the First Year of Hospitalization With Patients Who Have Been Hospitalized Continuously

Item	Hospitalized Continuously Group (N=24)	Discharged Group (N=24)	Both Groups
Age:			
35 and under	14	15	29
Over 35	10	9	19
Education:			
Grammar School	7	6	13
High School or College	17	18	35
Diagnosis:			
Paranoid Schizophrenic	11	15	26
Undifferentiated Schizophrenic	7	7	14
Other functional psychoses	6	2	8
Marital Status:			
Married	6	9	15
Divorced	2	1	3
Single	16	14	30

the mean-genetic-level scores obtained independently by the two judges was .87.

In order to test the major hypothesis — that genetic-level score is related to hospital status one year after admission — the sample of patients was divided into two groups. Those patients who remained hospitalized continuously for the entire year following admission were assigned to one group, while those who had been discharged during the first year on the recommendation of the hospital staff and who had remained in the community were placed in the other group. In order to keep the experimental groups sharply defined, all other patients — for example, those discharged against medical advice or those who were readmitted during the year — were not included in this comparison. The characteristics of the experimental groups on significant background variables are reflected in Table I. Chi square tests reflect no differences between the groups which approach the .10 level of significance. One may conclude that the experimental groups are roughly comparable in terms of these variables.

RESULTS

The mean genetic-level scores for the two groups were compared statistically. For the Hospitalized Continuously group, the mean and standard deviation were 3.039 and .480 respectively; for the Discharged group, they were 3.410 and .391. The critical ratio of the difference between means was 2.88, which is significant beyond the .01 level, and reveals a significant positive relationship between the Rorschach mean genetic-level score and status of the patient during the year after hospital admission.[3]

DISCUSSION

The present results indicate that a systematic theoretical framework combining Werner's Developmental Theory and Psychoanalysis is capable of generating valid predictions concerning the course of mental disorders. One may conclude that there are different degrees of psychological maturity among mental patients and that these differences are reflected in the Rorschach genetic-level score. The results of the present study indicate that the genetic-level score is related, as predicted, to the patient's ability to merit discharge from a mental hospital.

---

[3] Further confirmation of the possibility that the Rorschach genetic-level score is related to psychological maturity is available from the records of fourteen patients who did not fulfill the criteria for inclusion in either of the two experimental groups. These patients were either readmitted during the first year following their selection as subjects or left the hospital against medical advice. It was felt that these patients were probably more mature than those who remain continuously hospitalized, but were probably not as mature as the Discharged group. Their mean-genetic-level score is exactly the same as the mean score for the Discharged group: 3.410.

From a practical point of view, the results suggest one explanation for the inability of many investigators to obtain positive findings using the Rorschach prognostically. It is possible that these unsuccessful investigators have been scoring the Rorschach for "traditional" Rorschach categories while clinicians utilize different variables, perhaps without scoring them, in their day-to-day work. Many unsuccessful investigations in this area have been based on an unselective empirical approach. Considering the inadequate theoretical basis, usually in combination with clinical naiveté, it would have been surprising if these studies had been more fruitful than they were.

The present study, to the contrary, stems from the application of a systematic theoretical position. The results lend support to the hypothetical formulations, especially as they apply the concepts of psychological maturity and regression to an understanding of the course of mental disorder.

REFERENCES

1. Becker, W. C. A genetic approach to the interpretation and evaluation of the process-reactive distinction in schizophrenia. *J. abnorm. soc. Psychol.*, 1956, *53*, 229-236.

2. Friedman, H. Perceptual regression in schizophrenia: An hypothesis suggested by the use of the Rorschach Test. *J. proj. Tech.*, 1953 *17*, 171-185.

3. Hemmendinger, L. Perceptual organization and development as reflected in the structure of the Rorschach Test responses. *J. proj. Tech.*, 1953, *17*, 162-170.

4. Lane, J. E. Social effectiveness and developmental level. *J. Pers.*, 1955, *23*, 274-284.

5. Lofchie, S. H. The performance of adults under distraction stress: a developmental approach. *J. Psychol.*, 1955, *39*. 109-116.

6. Pena, C. A genetic evaluation of perceptual structurization in cerebral pathology: an investigation by means of the Rorschach Test. *J. proj. Tech.*, 1953, *17*, 186-199.

7. Phillips, L., Kaden, S., and Waldman, H. Rorschach indices of developmental level. *J. genet. Psychol.*, in press.

8. Rosenblatt, B., and Solomon, P. Structural and genetic aspects of Rorschach responses in mental deficiency. *J. proj. Tech.*, 1954, *18*, 496-506.

9. Werner, H. The concept of development from a comparative and organismic point of view. In D. B. Harris (Ed.), *The concept of development: an issue in the study of human behavior.* Minneapolis: University of Minnesota Press, 1957.

10. Wilensky, H. The relationship of Rorschach developmental level to hospital adjustment and social participation among chronic schizophrenics. Paper read at Eastern Psychology Assoc., New York, April, 1957.

11. Zubin, J., and Windle, C. Psychological prognosis of outcome in the mental disorders. *J. abnorm. soc. Psychol.*, 1953, *49*, 272-281.

Received March 26, 1959

Language as Index to Perceptual Modes

MARIA LORENZ[1]

INTRODUCTION

Perception, like all mental events, is a subjective experience. This class of events becomes accessible on the phenomenological level of identification, description and study, only in the form in which it is exteriorized and exhibited. Language provides a natural and spontaneous form through which man represents his perception of external reality.

The notion that language may provide an effective empirical instrument for the study of psychological events, particularly events in the realm of thought, was given its original impetus in the field of cultural anthropology. Sapir (1) and Whorf (2) have shown that the categories of grammar and syntax of a language carry the broad conceptual notions of the culture. Primitive cultures, with different conceptual notions, exhibit a different structure and ordering of their language. The interpenetration of thought and language can be shown to hold equally when the focus is narrowed to the particularized level of the individual in lieu of the culture, and to perception as a specific aspect of the thinking process.

The Rorschach language protocol lends itself particularly well to a scrutiny of language as an index to modes of perception.

The Rorschach test brings to a focus the mental activity that gives a representational form to an unstructured percept. It provides a convenient text of the transformation of a perceptual experience into an ideational process. The transformation of the external 'real' object into its equivalent psychic representation, the mental image, is reflected in language. As the individual formulates his responses, he spontaneously gives form, through his use of language, to the complex pathways by which he arrives at his interpretation.

The formal pattern of the language response can be used as an index to the perceptual modes congenial to the individual. The purpose of this paper is to identify and illustrate certain modes of perception as they appear to be represented in language.

THE PATTERN OF PERCEPTION

Patterns of verbal response are as individually meaningful as the variations in content. Comparison of any two protocols shows the stamp of different minds in the patterning of the language response.

The essential features of a Rorschach response are:

1. The experiencing subject, the "perceiver".
2. The perceptual stimulus, the "percept".
3. The psychic representation or "image" derived.
4. The mental context, or associative and memory background.

The language protocol gives verbal acknowledgment, direct or inferential, to each of these factors. Each individual protocol shows a distinct pattern in which certain of these features acquire relative prominence, while others recede.

The quotations from four records[2] given below illustrate the different patterns of emphasis.

Focus upon the image is prominent in the characteristic responses of the following record:

Card I:	"Two angels"
	"A bell"

---

[1] From the McLean Hospital, Belmont, Mass., the Massachusetts General Hospital, Boston and Harvard Medical School.

[2] Quotations are selected so as to mirror the total response pattern of the individual record.

"A woman"
"Antlers of a deer"

Card IV: "A woman knitting. That's my impression. I first thought of two witches."

This record emphasizes the image formed by the perceiving subject. No spontaneous reference is made to any concrete aspect of the perceptual stimulus.

By contrast, *focus upon the percept* appears strongly in Record II:

Card I: "*All of them* look like x-rays of the plural cavity. *One or two of them* look like longitudinal sections of an animal under a microscope. This one here especially. *Blurry lines.* Particularly because of the *dark line where it is folded,* which reminds me distinctly of the spinal cord."

Card II: "Everything looks like fur because *it's so sketchy.* Either that or maybe, oh, various territories. Very *irregular. Type of line.*"

In this record, there is constant notation of the perceived characteristics of the stimulus — line, texture, color, location. The subject's awareness appears more strongly focused on the reality before him than on the image aroused within him. Awareness of himself as observer and awareness of the image suggested are less marked.

In most records, some account is taken of the actual presence of the percept. Language reference to the perceived stimulus may be designative as "it", "here", "this" or variously elaborated in descriptive detail, i.e., "the red lines", "the sketchy part".

In another type of response, the perceptual process scarcely appears arrested by either the percept or the image. The emphasis of the response appears to be upon *the associations aroused*. The following is an example:

Card VI: "Looking down, like Grand Canyon. *We saw Grand Canyon on our way East from California.*"

Card VIII: "The top section looks like the lungs of a man. *I had pneumonia four times and that's why I think of lungs. My wife had bad bronchitis.* That's like lungs."
"You call them beaver nests. *Reading about them last night in the National Geographic Magazine.*"

Card X: "These might be two rattlesnakes here down below. *One of my beagles was bitten by a rattlesnake last year.*"

The associations may be reality oriented in terms of recollections and memory, as is shown in the record quoted, or may be projected into imagery and phantasy. For clarity of demonstration this relatively extreme illustration is presented. But once identified, the tendency to rapidly deflect emphasis from the immediate experience to more extraneous notions can be detected in various more subtle forms.

The role of the perceiver may be overtly designated or lie hidden within the semantic categories of the predication.

The overt reference to the subject differentiates the approach of *the perceiver* to the stimulus as agent or as recipient. Active initiation of the perceptual process is illustrated by patterns beginning with "I".

"I see . . . Here I see . . . I think of . . . I conceive of this as . . . I can see . . . I imagine a . . . I make out of it . . . I get . . . I get an impression of . . . I could see . . ."

The use of the reflexive pronoun as a main pattern of response shows a receptive orientation:

"To me, it suggests. . . It looks like............to me. . . Makes me think of. . . It reminds me of. . . It suggests............to me . . ."

The use of the reflexive pronoun "me" or the introduction of the subject "I", indicates a relatively subjective aspect of the perceptual act.

In a third category of responses, no overt reference is made to the perceiver:

". . . It looks like. . . It could be. . . It's a. . . It might be. . . This is. . . This appears like. . . The whole thing suggests . . ."

By contrast to the other responses, this approach implies objectivity. The role of perceiver, at a more deeply involved psychological level, can, however, be identified in the semantic categories of the predication. This aspect of the perceiver will be discussed separately in greater detail.

This four-dimensional interplay between perceiver, percept, image, and associated notions translates itself automatically into the spontaneous verbal responses. A degree of flexibility in the distribution of emphasis among these four is characteristic of many records. A fixed adherence to one mode of response is significant. Obvious examples are such instances where the percept-linked response, called "Concrete", i.e. — "an ink blot", almost or completely obliterates the image and perceiver, and the "fantastic elaboration" response which dwells almost exclusively in the realm of the image aroused. Both of these responses, seen against the background of the perceptual process, appear less isolated as psychological phenomena. By noting these points in the language pattern, some conception of the dynamic process of the mental act is obtained.

The following protocol illustrates the kind of information discernible in the language patterns:

Card III: *"On the left side, in the left middle bottom* of the *ink blot,* is a woman standing in a hallway and there's moisture coming down the walls of the sides of the hall and there's a long corridor leading to nowhere."

Card IV: *"On either side* are, uh, meadows that are stretching down to the, uh, highway and the meadows are filled with tramps that have no place to go. *And in the middle* are a dried bundle of sticks that are held together by a thong. *And on either side of the central part of the inkblot* are, are men and women dancing in the street in old clothes. Tremendous godlike figures whose footsteps shake the earth."

Card VII: *"And in the middle of the Rorschach* there is an empty pool of rain that is occasionally stirred by the dropping of raindrops and there is no motion in the pool at all. And in the middle, in the middle there is a prisoner standing in a room with grey walls and there is complete silence and complete soundlessness and I mean it was as if the prisoner has never heard the meaning of sound at all."

In this response, fixation on the percept is simultaneous with emphasis upon the image by undue elaboration and addition of phantasy material. Immediately, the pattern of the language protocol can be distinguished as one of opposition and tension. The language pattern suggest a reformulation in terms of psychological events: the predominating tendency towards an uncontrolled expansion of the imagination is held in check by a tremendous effort to cling to the perceivable, the actual, the factual. Potentially, this tension could give way, and one or another of these tendencies could gain complete dominance. If the former, one would predict the emergence of frank delusions or hallucinations, if the latter, a reversion to completely static, literal, factual, percept-bound mental set that often presents itself as "concrete thinking".

In the pattern of Rorschach protocols, mental set towards perception can be identified. A subjective approach can be distinguished from objective orientation, "perception" can be differentiated from "interpretation" and "projection".

In some protocols the combination of the impressionistic "I see" response, followed by a fluid expansion into an endless series of images linked by "and a........", "and here........", occasionally including such statements as "the longer I look at it, the more things I see", with frequent localization responses that refer back to the subject such as "looking at it from this angle

I see" and "this way it could be" or "when I look at again", point to a fluctuating stability of the percept which can assume multiple forms. In this type of pattern the mental set is clearly towards projection rather than perception.

By contrast, some protocols show language characteristics of a different kind. An approach centered on "it", "this", "that" — predication, such as "might be", "appears", "resembles", "could be", qualifying attributes inherent in the object, single or few well-elaborated responses to each percept, place the focus at a distance from the subject. The relationship to the object is one of perception and judgment rather than of interpretation and suggestion. In this manner, the language protocol gives documental evidence of mental set towards "suggestibility" and "subjective interpretation of reality" in contrast to "psychological distance" and "objectivity".

THE PERCEIVER

The mental set and orientation of the perceiver is apparent in the predicate selected. The predication is an extension of the perceiver and relates back to the person making the judgment.

By far, the most frequent and popular response in Rorschach protocols is "it looks like". This may in part be a natural response to the direction given in the test situation. Ignoring for the moment the distinction between the agent administering the test and the subject taking the test, it would appear that the spontaneous general mental set toward identification and interpretation of an unknown stimulus is in terms of its "resemblance" to things that are known. If "looks like" is identified as a "resemblance" response, other predicates with similar implication "resembles" . . . "appears to be" . . . "has the appearance of" . . . "takes the form of" . . . "gives the impression of" constitute a group.

Responses such as "this could be" . . . "this might be" . . . "it would be" . . . identifies an approach to phenomena which is "hypothetical" or "inferential" rather than one of "resemblance".

A survey of actual responses immediately suggests further grouping and patterning. A "categorical" or "empirical" approach to phenomena is implicit in the use of predications involving the verb 'to be', i.e. — "it is" . . . "this is, are" . . . "here is, are" . . .

"Reminds me of" . . . "makes me think of" . . . suggests an approach through memory and association. These could be designated as "associational" responses. Another category of response is implied by: "it represents" . . . "symbolizes" . . . "signifies" . . . "this means". Here the perceiver gropes beyond percept and image towards the meaning of phenomena. For convenience, this may be designated as the "symbolizing" approach. An "impressionistic" approach is found in such terms as: "I see, could see, can see" . . . "make out of it" . . . "imagine it could be, is" . . . "I get" . . . "it gives me a feeling of" . . . "suggests".

Another definable category is the indirect maneuver, such as: "I was going to say this could be, is" . . . "I could say" . . . "I should say . . . "this is meant to be" . . . "you might say this is" . . . which presents an *artefact* or "facsimile" approach to the phenomenon in that it avoids direct responsibility for identification of the percept.

A last and extremely interesting mode of approach is the response of "representational immediacy" for intuitive, spontaneous perception. In this approach, energy is not diverted by conscious recognition of perceiver or percept, but goes directly to the image: "A bat" . . . "Two women talking" . . . "A bear-rug" . . . etc.

This rapid survey points to a broad, general classification of responses into (1) those in which the perceiver takes cognizance of the *process* of perceiving, of relating the percept to the image, and (2) those responses in which no cognizance is made, in which awareness of the image has an immediate and spontaneous quality.

In the latter, mental content appears directly and intuitively apprehended. The mediated responses give verbal acknowledgment of the attitudes involved in perception.

The response of representational immediacy points to a mode of representation that is an immediate, spontaneous awareness of "gestalt". This type of response may well suggest an intuitive appraisal of phenomena (4).

The mediated responses give verbal acknowledgement to the attitudes involved in perception. The response of inference "could be", "might be", implying probability or possibility, points to a theoretical aspect in mental attitudes. The categorical response of "is" or "is not" implies an empirical, factual or literal mode of representation. The semblance response of "appears" or "looks like" has to do with an aspect of the phenomenon and indicates a comparison of the perceived object to a conceptualized standard. This mode of approach appears to be highly form conscious in that it abstracts characteristics of form in the process of comparison or contrast.

The popular "looks like" response is often combined with other notations of resemblance or appearance. The following is taken in sequence from one record:

> "This looks like the GOP elephant."
>
> "This looks like two sultans sitting down. They look like they are conferring over a crystal ball of some sort."
>
> "This way it looks like the heads of two African people. This way it looks like heads of ostriches. Looks like they are wearing a jacket and looks like the bodies. – And that little red thing in the middle looks like a butterfly."
>
> "They look like animals flying through the sky."

In all subsequent responses throughout the test "looks like" is practically the only approach used by the subject. Somewhat more flexible, but also kept within the category or appearance, together with a tendency toward symbolizing and interpreting, are the responses of the following subject:

> "These look like wings, but it doesn't *appear* much like anything to me."
>
> "Maybe the figure of a girl, looks like one."
>
> "Like maybe red shadows in some costume, maybe hands. Must resemble something."
>
> "I don't know what the red thing *resembles*."
>
> "Buds, and these red things must *represent* something."
>
> "And this looks like some danger."
>
> "I see a black thing, maybe it resembles a figure."
>
> "I don't know what it resembles."
>
> "Green *might be a symbol* for a toy, maybe."
>
> "This looks like a plastile form, or an *interpretative* thing."
>
> "Might be something of a symbol."

The essence of the "looks like" response lies in its extension into the simile configuration "like". This immediately calls attention to the mental set of finding an analogy or comparison. The stress of verbs such as *appears, looks, resembles,* and such phrases as *aspect of, appearance of, form of* is upon the configurations, the qualities, that give an object the apparent characteristics and values by which it is related to other known objects. This response entails a process of abstraction by which the characteristics, or qualities are isolated from the entity for purposes of relating this entity to other entities.

The passive spectator, receptive to impressions, the "finder", in contrast to the active observer selective of impressions, the "seeker", is clearly mirrored in the contrasting responses of "I see" and "looks like". Characteristic of the former is the pattern of response found in one record:

> "I see . . . I get . . . I can see . . . here I see . . . I get an impression of . . . suddenly I see . . . the first impression is of an . . . here I get . . . the end of a . . . here I guess you would get . . . I get a conception of . . . as I look in it I can see a face . . . I also get a four-legged creature . . . I seem to see two images . . . I see too much."

This is an exaggerated pattern, occurring in a subject in whom suggestibility and imagination were highly overstimulated. The notion of "seeing" implies a view with a degree of expectancy of the anticipated or familiar. Through a train window, one "sees" the landscape. It is only when attention is selectively attracted that one "looks at" a hill, a clump of trees. "I see" has to do with what is seen in the mind's eye, the impression, the image. This approach is unfocused. In "looking at", attention is focused. When something "looks like" something else, a comparison is made. But one "sees" what passes before one's vision. Ryle (5) makes a useful distinction between "looking" and "seeing", describes the metaphorical use of 'see' for effortless and instantaneous recognition.

"Seeing" is generally less selective, attentive, critical of perceptual reality than "looking at". However, "seeing" may have the advantage of attaining a more comprehensive impression, a more vivid image. It may mean an uncommitted, unprejudiced, receptive and un-seeking point of view. At the opposite extreme, it may denote the quality of "seeing" in a crystal ball — it may indicate suggestibility, an undiscriminating, uncritical response to impressions, something of the seer, the visionary.

The "associational" response to the percept is illustrated in the following excerpts from the protocols of two subjects:

"This reminds me of two people fighting."

"The coloring from gray to black makes me think of clay or rock."

"This looks like another bat. Reminds me of a dream I had as a child, bats flying all over the house."

"This looks like a forceps or instrument. Reminds me of a forceps they use for childbirth."

"This reminds me a little of an orchid."

"This doesn't seem to remind me of anything except what a child would use at school, a little green, pink, orange."

"What's this thing — it reminds me of a cooking spoon."

Remarkably similar in approach is the protocol of another subject:

"Also it looks like something I've seen in biology class — pollen grains when magnified."

"These things remind me of a coastline."

"This reminds me of a quahog, it has a hard shell, you find them on the seashore."

"Right here — this thing makes me think of a bulldog's tail."

"This reminds me of a bird. I think a chickadee. They have black tufts over their heads, I think over their eyes."

"This reminds me of a little girl looking in a mirror."

"Makes me think of a pelican, big bills."

"These outlines make me think of things when I doodle. In grammar school we had to make balanced designs. That's what they make me think of."

"This reminds me of the cutup carrots we had in biology, the color and shape mostly."

"This looks like designs I made with shells. I sold them for Christmas one year."

"This reminds me of Mrs. Johnson's fur coat, the one she had on last night. The one I baby-sit for."

The structure of language in the above protocols shows the following characteristics: emphasis on the immediate particular percept, "this", "these", "here" followed by a predication "makes me think of", "reminds me of" which reaches into the past as concretely experienced, further followed by an elaborated specific image of something positively recalled as previously experienced, for example, "Mrs. Johnson's fur coat". These characteristics form a pattern of retrospective identifications and recall dependent upon cues given to memory and association rather than of imaginative projection.

Characteristic of the "facsimile" response are excerpts from a single record in which the role of the perceiver is hidden or deflected:

"We can see . . . you can see . . . you would say . . . you can observe . . . I can give a picture of . . . one might say . . . you can imagine . . . if you're famiilar with history, this . . . we can say . . . if you call . . . you have no difficulty in imagining that . . . one might perceive . . . if we reversed . . . we're going to concentrate on . . . it could represent . . ."

Another variation of the "facsimile" response is the following, taken from an individual record:

> "Supposed to look like . . . could simulate . . . meant to mean . . . simulates . . . it could be if . . . it's similar to . . . superficially looks like . . . this part looks like reverse of . . . like looking into a mirror."

These predications are coupled with content described as follows:

> "Silhouettes . . . optical illusions . . . monsters . . . figures . . . masks . . . cartoons: types of maps . . . outline of a face."

These two phases complement each other. This intellectualized abstract approach converts reality to a distant, illusory form or abstraction. The world is not met on terms of its existence but visualized, twice removed, a reflection.

Facsimile responses are tangential and redirective. In this type of response the observer avoids the obligation to hold himself directly responsible for the assertion made concerning the percept. He relies upon what "you" might find, what it is "meant" to mean, "supposed" to be, "meant" to be. This type of response implies a lack of a firm personal grasp of normative values concerning some aspects of reality, a reliance upon convention or convenience rather than upon inner conviction.

A comparison of Rorschach protocols differentiates the mental set through which different individuals approach reality, in this instance, the ink blot. Stable and recurrent patterns in language suggest habitual mental attitudes.

In summary, the class of predicate selected transmits the mental set of the perceiver. The modes of perception may be identified:

(1) The intuitive grasp of reality as shown in the response of representational immediacy.

(2) Abstraction from reality, via form.

   a. comparison—"looks like"
   b. appearance—"has the appearance of"
   "an aspect of"
   c. correspondence—"takes the form of"
   "has the shape of"

(3) Impressionistic response to reality—"I see"
"suggests to me"

(4) The categorizing of reality — "it is—is not"

(5) The stimulation of associations by reality—"reminds me of"

(6) The hypothetical or inferential approach to reality – "could, would, might be"

(7) The complication of the recognition of reality—the facsimile response

(8) Symbolization of reality—
"signifies"
"means"
"symbolizes"

The Percept

Responses to the Rorschach cards are conditioned more by the internal frame of reference than the external one. However, the external frame of reference, the characteristics of the ink blot, is utilized in arriving at the image. The degree to which awareness of the external reference points—form, color, texture, relationship of parts—is integrated into the total experience, determines the "distance" between observer and reality. Extremes and intermediary positions can be identified in the language protocols.

The least recognition of the perceptual stimulus occurs in those responses where the image or representation alone is named. In this category of responses, the function of the percept appears to be more that of a catalyst or intermediary. It does not in itself become a focus of attention. Analogous to the response of representational immediacy, in which the image takes hold and overshadows all else, is a parallel response to the percept, in which the awareness of the perceiver fastens to and is held by the perceptual experience. The continuation towards association or representation does not occur. These responses are familiar as "ink blot", "red ink", "blot pictures", "ink", etc. They may be identified as a percept bound response.

Intermediary between these extremes are other categories. The category of simple identification "it" or "thing" is frequently noted. Some records quite uniformly begin with "it" looks like, is, could be, etc. This sequence in one Rorschach protocol ran as follows:

> "This thing . . . These things . . . the whole thing reminds me of . . . this one . . . the whole figure . . . the red thing . . . the yellow thing . . . the thing there . . . the blue thing . . . a couple of things."

This general designation becomes particularized into a more direct *designation* response such as "this", "that", "these", "those" or *localized* specifically as "here is" or "there is". This is a departure toward pointing, localizing, particularizing. A third category of responses is relative in approach:

> "This way it looks like" . . . "upside down it looks like" . . . "from this angle" . . . "from an oblique angle" . . . "looking down at it" . . . "looking at it from this angle, I see."

The relation points back to the observer. This approach emphasizes the potential alteration of appearances as dependent upon the angle of vision.

Perspective responses, such as these, are exemplified in another record:

> "looking at it this way............" . . . "looking at from this angle, I see..............." . . . "I haven't looked at any of these vertically" . . . "looking down it............" . . . "look from the very top, it looks like............"

This approach through perspective seems to re-iterate and emphasize an awareness of the relation of all things perceived to the spectator. In the same moment that distance from the object is achieved, emphasis is nevertheless unconsciously placed on the fact that a relationship of distance does exist and may shift with the actual or psychological position of the observer.

Varying aspects of the actual appearance of the percept are selectively noted by the subject who abstracts from the total stimulus aspects of form, color or texture. These responses have their dynamic significance in Rorschach interpretation. These responses also convey another index to the mode of relationship to the perceived reality. Designation of the form of the percept as "the pattern", "the outline", "the formation", "the general shape of", "the design" denotes level of abstraction and conceptualization which differs from responses that identify and particularize the appearance, such as "this section here", "the two spots at the top look like", "the bottom section could be", "the two red spots on top", "the middle part", "the back stuff", "the alternate black and white area", "the darker material", etc. The response to the sensory aspect of the stimulus is apparent in comments such as "heavy lines", "the *solid* mass", "the *furry* part", "the *light*, airy part". Qualifications by direct emotional reaction are contained in "it's pretty", "ugh", "ugly", "horrid looking Thing". Modes of approach accessible or congenial to the individual can be differentiated on a continuum from the abstract, ideational, to the literal and concrete, the sensuous and the emotionally reactive.

The approach to the percept is suggestive of mental attitudes of attentiveness to reality in the following modes:

I. Fixation upon reality factors to the exclusion of further mental operations, as in the percept-bound response.

II. Fixation upon the meaning of the stimulus, ignoring the stimulus itself, except as a catalyst.

III. Awareness of reality through signification.
    A. Comprehensive generalization as "it", "the thing".
    B. Pointing and particularizing as "this", "that".
    C. Localizing as "here", "there".

IV. A relative attitude which makes

reality dependent upon the perspective from which it is seen.

V. Abstraction from reality in terms of form or characteristics.

VI. Emotional response to reality.

THE IMAGE

In the schema proposed for viewing the complete verbal response as a transcription of the mental event, a differentiation was made between the "real" object presented as stimulus and lying without the observer, and the "image" (psychic representation of the object) aroused within the observer. The "real" object retains relatively the same status except for selective attention given to its different facets by various observers. The "image" is the aspect of the object uniquely contributed by the individual observer.

Traditional "content analysis" takes note of the selection of a specific object from the range of potential objects which may be suggested by the percept. Categories of such potential objects (human, animal, etc.) have been established. Similiarly, analysis of "types" of images suggests the disposition of the observer to select from a number of potential categories the particular form in which his "image" is contained. This ideational form may be achieved by perception, interpretation, inference, projection, a combination of some or all of these approaches. The final form is crystalized in a name, i.e. "bat", "garden". Usually this representational form is a visual image, like: "bat", "butterfly", etc., but it may also be an abstraction like "an image", "a symbol", "a diagram", or the quality or aspect of an object, like "cloud effects", "like Haloween", "an oriental pagoda sort of thing".

In the individual Rorschach pattern, a strong preference for one type of category as opposed to other can be discerned and not infrequently helps to identify the dominant mode of representation characteristic of the individual. Some of the more frequent and obvious varieties of final representation form given to the percept are identified below.

The *identification* or naming of an *entity* is the anticipated and most frequent response, appropriate to the directions and inquiries of the test situation. The process of representation achieves its focus in naming the entity represented. This entity may appear on the language level as a universal, or a particular. Sometimes there is a tendency to deal with one or the other almost exclusively. The protocol quoted below illustrates the use of the universal:

I. 1. A bat
  2. A ball
  3. A child
  4. A butterfly
    May I turn it?
  5. Hands
  6. Breasts
  7. Wings

II. 1. Blood (slight laugh)
  2. Towers
  3. Water
  4. Horns, like unicorns
  5. A sort of wash, like a finger painting

V. 1. A hawk
  2. A buffalo, a bison

X. 1. Daffodils
  2. Cliffs

And from another record, the particularized response:

I. 1. Looks like a bat flying.
  2. Well, maybe an owl, sitting in the crotch of a tree.
  3. Two women hanging onto a fence in a dance of some sort with their wings outstretched.

II. 1. Two eagles jumping at one another with their wings up beating like in a cockfight.
  2. The entrance to a monastery or a lamassary up in the Rocky Mountains.
  3. Two bears touching noses.

V. 1. Some sort of a mountain with an antennae or relay station, a man-made object at the top of it, constructed for some purpose.
  2. The neckline of a gown with some jewelry hanging down in front suspended by a cord.

X. 1. This could be some sort of ornamentation. A painted face with eyes and nose. Maybe a wolf's face with a sharply pointed nose and blunt snort with a little narrow tongue.

Obviously the use of the particular form may involve various qualities of elaboration and degrees of specification.

The distinction between the universal and particular may appear as a logical or philosophical pedantry until one notes the psychological implications which this mode of approach reflects. The first individual approaches the experience by aid of concepts and ideas — "a bat", "towers", "child" are not exactly images. These words stand for any bat, any tower, any child. The mental representations called up are within the conceptual realm of type and class. The second individual moves firmly into the realm of the individual and specific. "Two bears touching noses" are not any bears, but *two* particular bears who at a given moment in time touch noses. Hidden behind the participial qualifier, which is dynamically interpreted as a "movement" response (better examples are such as "two bears climbing a mountain", "native dancing around a fire") is a psychological act of some consequence. As soon as an entity is characterized by movement, it is also characterized in another way, namely, the entity is oriented in time, at a given instance. And more often than not the participial qualifier of movement also localizes in space "on a mountain" or "around a fire". When an object becomes fixed in the dimensions of time and space it assumes status in an existing world of reality. The reality context may be imaginative, hypothetical, or actual. As language moves from the universal towards the particular, mental events appear to move from conceptual spheres towards imaginative representation and existing fact. A third representational dimension is given the object when it is qualified by a clause denoting a characteristic of the object, i.e.: "*a head with a hat on it*", a chicken "*with its legs cut off*", a "*fluffy* cloud", a *pixie* face".

Ordinarily adjectives suggest an expansion or addition of characterizations. Adjectives also reductively *limit* the mental image from any "head" or any "cloud" to a particular head or cloud. This limiting function draws the representation into a more narrow sphere, from indefinite extension into particularizing fact.

The image may be identified as an *entity*, a thing named, belonging to the phenomenal world, i.e., "a sea monster", "a scorpion or bug". Or the image may be barely acknowledged, hidden behind some aspect of *appearance*, i.e.: "fantastic looking creation", "look of heraldry", "something cloudy", "a pixy-ish thing". Or the *impression* may be emphasized: "cloud-like effect", "Halloween effect", "like an under-water view". The statement is completed with an aspect, quality, or style of the image, rather than a naming of the image. Illustrations of this type of response are the following collected from one record:

"a bat effect"
"Well, I see 'after you my dear Alphonse'."
"sort of dressy, after dinner effect"
"the insect effect hits you"
"a sort of shrine effect"
"a little touch of Walt Disney"
"rock gardens or sea-garden effect"

From another:

"something feudal"
"heraldic – look of heraldry"
"pan-like creature"
"masquerade thing"
"like in the movies"
"prehistoric"
"a negroid type"
"a Cyrano-de-Bergerac nose"
"the pose seems Napoleonesque"
"an oriental pagoda sort of thing"

A tendency to analogy, i.e. "bird-like" thing, or to metaphor, i.e. "all the carnivals in Havana" is present. Characteristic of this type of response is the disappearance of the object under the *impression* made upon the observer. The mind leaps to the impression, analogy, the style, or quality, without pausing overly long with the object itself.

In another type of response, the object disappears leaving an undifferentiated image, a schema, or an imageless abstraction.

Example of the *undifferentiated image:*

"two figures standing holding something"

"not a certain thing, no definite thing"

"a creature, a lot of things"

"two of something holding something"

The vagueness, that must be attendant upon this approach to the phenomenal world is usually apparent in the subject giving this order or responses.

Example of the *schema response,* which at a more integrated level, still leads to the same unsubstantial world of shadows:

"silhouettes"

"reflection"

"optical illusion"

"masks"

"figures"

"diagram of............"

Somewhere in between falls the *imageless abstraction:*

"a form of some kind"

"I see impressions"

"a figure"

"two objects"

"a design"

Subjects using this approach appear to see the world primarily in its dimensions and outlines. At an integrated level, this approach may be highly abstract, form conscious. In its least perfected state, it is vague, undifferentiated and devoid of meaning or content.

A third mode of approach to the phenomenal world is by suppressing the object or its qualities to the *meaning* the object has for the observer. This response goes directly to the symbolic significance of the object. As illustration:

"I can see anger, envy, jealousy."

"Well, this looks like...............disembowelment."

"This represents symbolically myself. An organized disorganization."

And:

"This seems like a whole ugly mess and the middle seems like an escape."

And:

"A symbol of religion."

"Sign of a chief"

"A ritual"

"A parody"

"A satire"

"Another world, another planet"

"It mythologizes animals; it dehumanizes man."

Consistent responses of this order suggest that the observer dwells within the world of meaning rather than the world of fact, explodes the empirical world into a larger world of significance, uses empirical reality as a cue and illustration of his inner life.

Another category of response identifies the experience or emotion of the subject. The illustrations are taken from one record in which this pattern was unusually prevalent.

"Something like anger—or competition. Something like an argument going on."

"Some sort of worship. Strong feeling of some kind. Either worship or entertainment or argument."

"The way the redness goes looks like violence."

"Just the way the redness is splattered looks like crime."

"Just looks exciting, whatever it is."

"Something overbearing. All it can do is remind me of some sort of giant."

"Something for comical or cute effect of some kind."

"First reminded me of something south and warm."

A final category of responses is that in which no entity or object is named, but reference is made to predication or relationships. From one record:

"something closing in"

"A coming together and pulling way"

"maybe a thing that's coming out"

"could be closing or opening"

Another record:

"It could be the rising out of some goddamn fanciful experiment."

Another record:

"It's a faction of back to back, everybody, everybody is trying to gain their own ends."

"To me it looks like China being split up."

"This is what took place after that."

And:

"Something that holds us all together."

And a last record:

"Maybe dancing"
"Tail end of something"
"Something ready to slip into"
"A hinge being closed and this like the opening into a mouth."

This type of response has in common the emphasis upon an event as opposed to an object, upon a process, a relationship. The identity of the object is minimized or disappears.

Modes of comprehending and defining phenomenal reality appear as:

I. Identification of the substance or content of reality in terms of ideational awareness.
    A. of concept, class, type
    B. of visual image
II. Abstractions of the appearance of phenomena.
    A. Its aspects and qualities
    B. Response to impression or suggestiveness
    C. Schematization of reality
III. Symbolization of reality
IV. Experiencing of reality at
    A. Level of emotional participation
    B. Level of forces, tensions, actions, relationship.

SUMMARY

In language, the individual re-presents the ideational forms by which he shapes his experience of the world. Study of the language pattern in Rorschach protocols permits identification of various modes by which an actual experience is transposed into an ideational experience, to be represented again on the level of actuality, in the form and content of language. The perceiver, the 'real' object and the 'imagined' object are acknowledged in the verbal response, but in a variety of forms characteristic of the individual.

These various forms coalesce to identify general patterns or predominating modes of relating to the phenomenal world. These patterns have been tentatively described as perceiver, percept or image oriented. The formative impulse may be identified in:

(1) The "response of representational immediacy" which suggests an intuitive, comprehensive grasp of the essential nature of the object.
(2) The "form conscious response", which tends to abstract from appearance certain attributes and qualities, to note resemblances, impressions, analogies.
(3) The "empirical response" which confronts the immediate reality of the experience.
(4) The "theoretical response" which methodically organizes, structures, and systematizes phenomena in accordance with reason.
(5) The "response of symbolism" which pursues the meaning of the phenomena.
(6) The "response of empathy" in which the individual feels himself into an object by awareness of moods, attitudes, tensions, reactions in himself.
(7) The "schematized response" which deflects or complicates recognition of the object.
(8) The "associational response" in which memory and associations are readily activated.

In language, as surely as in myth and art (6), man represents the world as he perceives it. This art of representation is discernible in the flow of every-day language. The modes of representation exhibited in the individual's language may stand as index to his modes of perception.

CONCLUSION

Differences in mental set, in attitudes of inspection and discernment, account for the variations in the response of different individuals to the same perceptual object. The content of perception is represented in language by the name given to the perceived object. Analogously, the manner of perceptions appears in language in the manner, form, or mode of representations selected by the object.

Language not only expresses the product of thought, the idea, but shows the imprint of the process of thinking, the ways and means by which ideas are shaped. This formative process can be identified in the configuration and pattern of language.

REFERENCES

1. Sapir. E. *Selected writing of Edward Sapir*. D. G. Mandelbaum (Ed.). Berkeley: U. of Calif., 1951.

2. Whorf, B. L. *Language, thought and reality*. Boston: Instit. of Technology, 1956.

3. Whitehead, A. N. *Symbolism, Its meaning and effect*. In *An anthology*. New York: MacMillan, 1953.

4. Lorenz, K. *The role of Gestalt perception in animal and human behavior*. In Whyte, L. *Aspect of form*. London: Lund Humphries, 1951.

5. Ryle, G. *The concept of mind*. London: Hutchinson's Univ. Libr., 1952.

6. Cassirer, E. *The philosophy of symbolic forms*. Vol. 1, *Language*. New Haven: Yale. 1953.

Received January 9, 1959
Revision received May 23, 1959

Style, Focus, Language and Content of an Ideal Psychological Test Report

MARTIN MAYMAN

The workshop[1] on which these notes are based consisted of fifteen one hour discussions[2] by clinical psychologists at The Menninger Foundation. The procedure followed was a rather free one. Sample test reports written by five of the supervising psychologists and representing a variety of report "types" were submitted to the group anonymously for critical examination and analysis. The reports showed fairly wide individual differences in approach to report writing. The discussion was limited largely to an examination of the report styles, structures and contents.

In several important respects the reports had much in common—approaches to report writing which were shared tacitly by all of the group and did not therefore come up for discussion at all. Notable in this respect were the following:

1. The reports were patient-focused and problem-focused rather than test-focused. Each test report was in effect a compact case synthesis as seen from the point of view of the psychologist's test data.
2. No report followed a pre-established outline. Rather, each of the reports seemed to have been organized so as to convey most succinctly a picture of the particular patient, the particular clinical problem encountered and the psychologist's contribution to an understanding of that problem.
3. The psychologist recorded only his conclusions, not the supportting test scores or the transitional inferences leading up to his final synthesis.
4. All the reports were based upon psychoanalytic theory, with a focus largely on ego processes and ego structure. There were virtually no speculative inferences about "deep" unconscious impulse-configurations.

Notes of the discussions have been sifted for the principle themes which came up over and over again. There were six such themes, and the discussions may be of sufficiently general interest to justify the publication of this report. Verbatim quotes from the minutes of each meeting are used liberally to illustrate the various comments and conclusions.

The six main themes will be discussed in the following order:

1. Identifying the ego structure and its pathology.
    a. The defense structure
    b. Ego strength
    c. Ego weakness
    d. The ego's position vis-a-vis its pathology; countertransference "leads"
    e. Psychopathology
2. The organizing foci of a test report.
3. Inferences about core conflicts versus emphasis on ego-structure.
4. Recommendations and predictions concerning treatment.
5. The use of illustrative material in case reports.
6. The use of jargon.

---

[1] A workshop of The Menninger Foundation Post-Doctoral Training Program in Clinical Psychology. This program is supported by the United States Public Health Service.

[2] Participating in these discussions were: Doctors Gerald Ehrenreich, Gerard Haigh, Ernest Hirsch, Philip Holzman, Leonard Horwitz, Martin Mayman, Irwin Rosen, Helen Sargent, Herbert Schlesinger, Howard Shevrin, Richard Siegal, Kathleen Sinnett, Sydney Smith, and Monroe Stein.

1. Identifying the ego structure and its pathology.

Many of the criticisms directed at even good reports bring out a common failing: the report falls short of its purpose by not developing explicitly the clinical implications of the statements made about the patient in the report. The statements remain essentially descriptive rather than explanatory. For example, when a patient's defense style is identified in a report, the psychologist should do more than itemize the salient defenses: he should try to state those conditions under which a particular defense is most likely to be mobilized, what purpose is served by the defense, how effective it is likely to be, what tends to follow a failure of this defense effort and what the patient is like under conditions other than those which mobilize a particular defensive position. More amplification upon the meaning or clinical relevance of ego processes singled out for comment would have improved many of the ego-diagnostic statements which appeared in reports. This was, in fact, the most common failing of otherwise excellent analyses of ego structure, as is evident in the following excerpted comments about various facets of ego organization:[3]

a) The ego's defense structure:

Often a patient's defenses are described in a report but their place in the total picture is not explicated. If the patient is prone to "act out," how compelling is this tendency? To what extent is it likely to interfere with treatment? How adequately does the patient check his acting out tendencies? If we find a patient relying to excess on the defense mechanism of "avoidance," we should study how easy is it to get her to stop "avoiding," what approach is most effective for this purpose, what she resorts to when her avoidance mechanism is blocked. If "tight control" is mentioned in a report, it would be useful to be told also how severely this limits the patient's spontaneity, what areas of functioning are most implicated, how serious a problem the "tight control" is likely to be in psychotherapy or psychoanalysis, whether the control is likely to become more rigid or less in the psychoanalytic situation.

b) Ego strengths:

Merely to mention available ego strengths is not always helpful in and of itself. For example, one report gives the impression that the patient has a good deal of conscious awareness of the defensive meanings of some of her character traits. If so, this is well worth discussing more fully. How genuine is this insight? To what use is it put or can it be put? What are its implications for the current status of her ego?

c) Ego weaknesses:

The psychologist should not be content with identifying the presence of a marked regressive potential. If the patient has "projective and cyclothymic tendencies," then these should be evaluated carefully: Under what conditions are they likely to come to expression? Is the patient close to the brink of decompensation?

d) The ego's position vis-a-vis regressive manifestations; to what extent are they ego-alien or ego-syntonic?

One report notes a "latent homosexual component" which "lies rather close to consciousness." It would seem that the examiner should have set himself the examinational task of determining how close to consciousness this homosexuality lies and whether in fact the patient might not be overtly homosexual, by eliciting the patient's attitude toward these suggestive responses.

The examiner would do well at times to examine and discuss the implications of his feelings about the patient as a clue to identifying the ego's "position" or stance in an illness. For example, it seemed quite obvious from one report that the examiner was quite fond of the patient, and the group considered how these positive feelings might have been used to tell us more about the patient rather than blocking as they did a more complete thinking through of the nature and severity of the psychopathology. The patient's appealingness, her humor, etc., which so appealed to the examiner might well have provided cues which, synthesized with formal test findings, could have added to our knowledge of the patient's character structure.

e) Psychopathology:

The passing reference to "suicidal gestures" is a bit startling and merits more explicit discussion: How adequate are her controls to deal with such propensities? How prone *is* the patient to indulge herself in this way?

---

[3] Excerpts from these seminar discussions are printed throughout this article in small type. They are included here as examples of specific criticisms which were directed at sample reports.

2. *The organizing foci of a test report.*

The organizing axes of a good report should be the clinical issues which prompted the request for tests or those which arose in the course of testing. Without such foci a report often lacks purpose or direction. A report should be built around specific clinical issues, including both the specific questions the psychologist is asked to answer, and the questions which emerged during the evaluation which are important enough and pertinent enough to receive attention in the test report.

> The report seemed to lack direction. No clinical problem was presented and the report "seems not to go anywhere." Clinical issues were not clearly defined and the context in which the report was being written is not made clear...

> This report seems to deal largely with anxiety tolerance and the means available for coping with anxiety, but leaves these questions implicit, so that the answers too remain more or less implicit. The report would have been more succinct and to-the-point if these questions had been made explicit...

Choosing appropriate questions around which to organize a report often presents difficulty in its own right. What limits should be set on what one will attempt to answer with psychological tests? Are there some questions which cannot be answered and should not be tackled? For example, to what extent is it appropriate to attempt any specific predictions of future behavior such as is called for by such referral questions as: May this man kill someone if released? Is it likely he will kill himself? Will he start drinking again?

Of course, a test report must have organization in another respect as well, namely the use of an internally consistent theory of motivation and psychopathology, which is understood in all of its subtlety by the examiner so that he can explicate the "layering" and interconnections among his data and achieve a dialectic synthesis of initially disparate observations:

> Some seeming inconsistencies appear in the report; for example, the contrast between the alleged rigidity and constriction, and the rich, revealing TAT stories told by the patient. This discrepancy should have been discussed and explained.

More serious inconsistencies not infrequently occur in the use made of dynamic configurations observed in the tests – hints of major pregenital fixations, core neurotic problems or transference paradigms:

> The question of the level to which the patient seems to have regressed and become fixated should have been made explicit. The examiner seemed to be minimizing the significance of the pregenital fixations. However, the material cited in the report leads one to suspect salient oral and masochistic components in her symptoms of nausea and her anhedonic state which should have been recognized and integrated better into the diagnostic synthesis.

3. *Inferences about core conflicts versus emphasis on ego-structure.*

The most frequently discussed strategic problem in report writing concerned the "depth" at which the report should be pitched, that is, whether to focus on questions of ego *structure,* or on the *content* of core neurotic conflicts. Some reports obviously tried to explicate at some length on the patients' core conflicts; other reports by-passed this question and dealt largely with the ego's "equipment" – its strengths, weaknesses, and preferred defense mechanisms – for coping with its conflicts, whatever they might be. It was suggested that the choice may be a strategic one depending upon the kind of clinical problem one is concerned with. Where the problem is one of treatment planning, then structural ego characteristics are of salient importance; where expressive psychotherapy has been recommended as the treatment of choice, then core conflicts and transference paradigms become more relevant. It was suggested by some, however, that transference paradigms should be outlined only if they have some implications for the "handling" of a patient in the hospital or in supportive therapy. This is less useful, or not at all useful, when the patient is going into more or less orthodox psychoanalytic treatment where these observations emerge naturally in the course of treatment.

The question of content versus structure is in one respect artificial and should probably not be formulated in either-or terms. The relative stress placed upon content or formal characteristics is something of a figure-ground problem for the psychologist. Where statements about unconscious dynamics are made in a report then there should be some reference to the ways in which the ego handles these conflicts. Conversely, when the defense structure is spelled out in a report, this should be done (ideally) with some reference to the core conflicts which are bound up in the various impulse-defense configurations. Impulse and defense are not separate and distinct processes but rather two facets of a single process. Looked at this way, defense structure and core conflicts become points of view toward the same material rather than substantively different realms of inference.

4. Recommendations and predictions concerning treatment.

The focus of a report depends largely on its purpose. The problem of how far the report should be treatment-focused rather than diagnosis-focused was discussed. It was agreed that it is the obligation of the psychologist to alert the psychiatrist to treatment implications of the report's often overly-condensed statement of findings. Too often a report is written in a form more useful to other psychologists than to a psychiatrist who is not as adept at translating diagnostic test findings into more concretely clinical terms.

Whether or not the report makes specific treatment recommendations, it may still remain largely treatment-oriented by raising pertinent clinical questions, empathizing with the problem of the future therapist and anticipating the questions the therapist will ask about this patient. If the test report is written for a future therapist, then some predictions as to the way in which the therapy process may unfold, the kind of resistances which will be encountered, the "depth" of these resistances, etc., should be attempted.

5. The use of illustrative material in case reports.

Another issue, one of style rather than of report content, concerned the inclusion of illustrative material and direct quotes in a test report. The value of such "live" material is that it helps convey to the psychiatrist a more vivid picture of the patient as we see him in his test behavior:

> The TAT illustrative material cited in this report is very pertinent, vivid and revealing, and adds depth to the statements they are chosen to illustrate.
>
> One of the psychiatrists was quoted as saying that it is particularly appreciated when the report is written "convincingly." He meant not logical convincingness but literary convincingness, that is, that the report should help the patient come alive for the consultant.

Illustrative material must, however, be chosen with great care. Sometimes such material is used only to assure the reader that the report *is* indeed based upon test findings, when it may only be true that the examiner is presenting a loosely collected set of clinical impressions, not a well-digested and integrated set of test inferences.

The trouble with illustrative quotes is that they may raise more questions than they answer:

> The example cited as an illustration of the patient's latent self-concept justifies some question about the possible presence of thought disorder. The examiner did not discuss this aspect of the example except to rule out its pathognomonic significance. Nevertheless, the question remains in the mind of the reader. This often happens when verbatim examples are used.

When direct quotes are used they

should be lucidly illustrative vignettes which help make a particular point sharper and more vivid. Convincing, self-explanatory examples of this sort are, however, hard come by. When direct quotes are used as *evidence* to help bolster one's conclusions, or as *data* from which the reader is expected to draw his own conclusions, they almost always weaken a report.

6. The use of jargon.

Much attention was given to the tendency to take the meaning of some terms for granted when, in fact, they communicate very little or prove to be ambiguous when looked at closely. Such terms often mask real unclarities in the examiner's thinking. Often, these terms create the illusion that they express some very precise conclusion, whereas actually their precise implications need to be made much more explicit before the statements acquire genuine meaning. Closer examination of these phrases would reveal that the idea which the report intended to communicate was expressed incorrectly or at best ambiguously.

The terms which came in for such criticism were: "decompensating," "psychotic character," "hysteriform," "impulse-ridden," "impulsive," "malignant," "identification with the aggressor," "strong depressive features," "compulsivity." Other concepts which bear closer scrutiny are, "narcissistic," "ego strength," "schizophrenic," "projective mechanisms," "phobic tendencies," "strong oral-aggressive drive." Some sample criticisms give the tenor of the doubts expressed by the group:

> When the report speaks about the patient "seeing herself as," it is difficult to know whether this means that she sees herself consciously in these terms or whether this characterization of self and others is only implicit in her behavior and appears only indirectly via projective tests.

> The phrase "impulse-ridden, hysteriform-character structure" is internally contradictory. An impulse ridden character structure is not the same as a hysterical character. The use of the word "hysteriform" is ambiguous and really only begs the question. If the word means that this is a patient who is like the "hysteric," then the resemblance should be defined explicitly. Apparently all it means in this case is a kinetic potential, a tendency to discharge tension and affect directly.

Or, if not ambiguous, a jargon term may be banal:

> Use of the term "malignant" in the statement "not many of these (disturbances) have a malignant tone," tends to beg an important question. If the distinction between malignant and non-malignant is to be made clear in the statements, then this distinction should be spelled out in the report rather than summarized with just a single word. The word malignant here is really no more than a pretentious way of saying "very sick."

Jargon terms often serve only to convey an attitude or value-judgment. Objection is taken not with the psychologist expressing how he feels, but with the impression created by the use of such terms that the judgment is a carefully reasoned conclusion, when actually such terms usually short-circuit the inference process and represent premature, vague and imprecise formulations.

Conversely, a report which presents its abstractions in tangible form may be especially rich, both in the insight it affords into the patient's character structure and the contribution it makes to the clarification of clinical theory:

> The description of the perceptual and thought style of this patient makes vividly clear what is meant by a repressive-avoidant defense mechanism. The process is defined without any dependence upon jargon. There was some discussion of the concept of avoidance versus that of repression, and it was agreed that the kind of avoidance manifested by this patient is in the service of repression and helps to establish a series of buffer systems or layers of defense which guard the approach so to speak to that which is being repressed. With sufficient external pressure she may be prevailed upon to give up some of her avoidance mechanisms without affecting the repression itself.

CONCLUSION

If we were to summarize the essential features of a sound, helpful and comprehensive test report, the following points would be among the most salient:

1) The report is "diagnostic" in the broadest meaning of that term. It presents not only a picture of the ego structure with its strengths and weaknesses, but an analysis of the ways by which the ego can and does cope with intra-psychic conflicts and reality pressures.
2) The report is written so as to convey those observations and conclusions which are relevant to, and contribute meaningfully to, the clarification of pertinent clinical questions.
3) Not only does the psychologist present his conclusions as clearly and as honestly as he can, but he does it in language which will be meaningful to the reader.
4) The report shows internal consistency in its descriptive and explanatory statements, and reveals the careful dialectic synthesis which is usually required before genuine internal consistency is achieved.
5) The report reflects the fact that the psychologist has carefully sifted the intervening steps in the inference process and eliminated wild or unsound speculations; yet this impression is achieved without cluttering up a report with "evidence" or complex inference-chains.
6) Speculations about explanatory psychodynamics are kept within reasonable bounds and are identified as speculations in the report.
7) The psychologist takes responsibility for spelling out the various treatment implications of his test findings.

Received January 30, 1959

Impunitiveness and Unwitting Self-Evaluation[1]

ARTHUR H. ROGERS AND COLEMAN PAUL
Jacksonville (Illinois) State Hospital and MacMurray College

Rogers and Walsh (3) studied unwitting self-evaluation and found that highly defensive people exhibited a low self-regard when they evaluated themselves without being aware that they were doing so. The method employed in that study offered a promising avenue for exploring unconscious functioning experimentally. The present study is a further investigation of personality differences associated with varying unwitting self-evaluations.

The rationale of the Picture-Frustration Study has been given as follows:

> It is assumed as a basis for interpreting the P-F Study that the subject unconsciously or consciously identifies himself with the frustrated individual in each situation pictured, and projects his own bias in the replies given. Percentages of extrapunitiveness, intropunitiveness, and impunitiveness and of obstacle-dominance, ego-defense, and need-persistence thus indicate the degree to which he tends to employ these modes of reaction, explicitly or implicitly, in his everyday behavior (4, p. 168).

While people can certainly project their biases, they can also hide or repress their biases if their biases are considered socially undesirable. The familiar finding that attitudes which are consciously expressed are susceptible to manipulation in the direction of self-enhancement leads to the hypothesis that an extreme degree of conscious impunitiveness has a cognate substratum of unconscious aggressiveness.

METHOD

The *Ss* were 30 female freshmen at MacMurray College, selected on the basis of scores obtained on the M (impunitive) scale of the Rosenzweig Picture-Frustration Study from a group of 60 students to whom the test was administered. The impunitive group consisted of 15 *Ss* with a mean M% of 39.8% (ranging from 34% to 50%). The control group consisted of 15 *Ss* with a mean M% of 28.5% (ranging from 27% to 31.8%). These groups were formed through consideration of normative data on the P-F Study (5).

Ss were shown subliminal tachistoscopic exposures of their own photographs (along with photographs of other young women) and were asked to rate them as to aggressiveness. A masking technique (1, 2) was used to expose the stimuli.

Through the photographer for the college yearbook, photographs of the *Ss* were obtained without their knowledge. All photographs were in a standard 3/4 face pose, taken from the shoulders up. All *Ss* wore a dark sweater when they were photographed and had a string of pearls around the neck.

The photographs were shown by means of a projector-type constant illumination tachistoscope, which contained two double-contact 300 watt Viewlex projectors with 5″ E. F. Luxtar Ro Anastigmat F: 3.5 lenses, and Wollensach Rapax shutters with 1.5″ diaphragm apertures. A Cenco Powerstat controlled the illumination of the constant field. The photographs were projected by an opaque projector.[2] Projection was upon a beaded glass screen 97 inches from the tachistoscope, yielding a 20″ by 20″ image.

Two judges[3] rated the photographs

---

[1] This study is adapted from a thesis submitted by the second author in partial fulfillment of the requirements for the Master's degree in psychology at MacMurray College, July 1958, supervised by Professor J. C. Crumbaugh.

[2] The apparatus was constructed by the Lafayette Instrument Co., Lafayette, Indiana.

[3] Thanks are due to Martin Cohen and Lois Franklin for serving as judges.

on a seven-point scale of aggressiveness. Four photographs were randomly selected from the photographs rated by both judges as average in aggressiveness to serve as standard stimuli, to be shown to the *Ss* in addition to their own photographs. These four young women did not serve as *Ss*.

At the beginning of the experimental session the *S* was seated in a chair and a two-minute time period was allowed for dark adaptation. The only light that was present in the room was the illumination projected from the constant field of the tachistoscope. The recognition threshold was determined for each *S*, using a line drawing of a stopwatch as a test stimulus. Throughout this portion of the experiment, as well as the main part of the experiment, the shutter opening was set at 1/25 of a second. The illumination was varied in an ascending order of stimulus intensity, followed by a descending order. The mean of the ascending and descending series, with the subtraction or addition of an empirically derived correction factor of five volts (to correct the mean in cases where perseveration occurred in either the ascending or descending series, respectively), was taken as the recognition threshold for each *S*. Since it has been shown (1, 2) that briefly exposed stimuli near the limen which are supraliminal when presented alone can become subliminal when masked by the effect of a consciously perceived stimulus shown immediately after the briefly exposed stimuli, we expected that setting the tachistoscope at each *S*'s adjusted threshold would produce a subliminal, but noticeable, registration effect on the perception of the consciously perceived stimulus.

A transparent slide containing a line drawing of a relatively expressionless face of a young woman was then presented on the screen by the constant-field projector, remaining on for the duration of the experiment except for the brief times when the subliminal photographs were flashed. The following instructions were read to each *S:*

> This is a study of your impressions of very slight differences in facial expression. On the screen which you are viewing there appears a drawing of a young woman. With the use of a special projector I am going to change her expression very briefly, and the change will be slight. These changes in expression will be projected in pairs, and it will be your task to judge which change in expression of each pair is the most aggressive, the first or the second. I will prepare you by giving two signals, "ready – now." When I say "ready," watch the screen. When I say "now," there will be a brief flash, slightly changing the expression you now see on the screen. After you have been shown a pair of such changes, report which one of the pair looked the most aggressive to you; then the next pair will be presented.

Each photograph was compared with every other photograph, with a total of ten pairings shown to each *S*. The five photographs were shown in a systematically random order, with two seconds intervening between the presentation of the first and second photograph of each pair, and five seconds between pairs of photographs.

RESULTS AND DISCUSSION

Upon post-experimental inquiry, none of the *Ss* reported being aware that her photograph was used in the study. For each *S*, the five photographs were arranged in rank order depending on the number of times each was chosen as more aggressive when compared with the other four photographs. The critical measure needed to test the hypothesis is the rating of the self. Table I presents the mean self-ratings of the impunitive group and the control group. A rating of "1" represents a self-rating that is the least aggressive, while a rating of "5" represents the most aggressive self-rating. Table I reveals that the impunitive group rated themselves significantly higher than the control group in aggressiveness, thus supporting our hypothesis. The lack of a significant difference in aggressiveness of the two groups as rated by independent judges tends to rule out

TABLE I — Mean Self-Ratings of Impunitive and Control Groups

Group	Mean	S.D.	Difference	t	p
Impunitive	3.3	.32	.8	2.16	$<.05$
Control	2.5	1.40			

realistic differences in aggressiveness as determinants of the differences between the groups.

Since an objective difference in aggressiveness was not discovered, it is plausible that the unwitting aggressive self-evaluation of the impunitive group may have been based upon the denial of aggressive aspects of the self in the interest of maintaining self-esteem.

SUMMARY

The hypothesis advanced in this study is that an extreme degree of conscious impunitiveness has a cognate substratum of unconscious aggressiveness.

Using a masking technique of presenting subliminal stimuli in close succession to a supraliminal stimulus, 30 female *Ss* were asked to judge five subliminal photographs as to aggressiveness. Four of the five photographs were of intermediate aggressiveness. The fifth photograph to be judged was the *S* herself. The photographs had been obtained without the knowledge of the *Ss*.

An impunitive group, composed of *Ss* who obtained high M% scores on the Rosenzweig Picture-Frustration Study, unwittingly rated themselves significantly more aggressive than a control group of moderate impunitiveness, thus supporting the hypothesis advanced. Since two judges did not find any difference in aggressiveness in the two groups the interpretation was advanced that the impunitive group's unwitting aggressive self-evaluation may have been based upon the denial of aggressive aspects of the self in the interest of maintaining self-esteem.

REFERENCES

1. Eagle, M. The effects of subliminal stimuli of aggressive content upon conscious cognition. *Amer. Psychologist,* 1958, *13,* 355. (Abstract)

2. Klein, G. S., Spence, D. P., Holt, R. R., and Gourevitch, Susannah. Cognition without awareness: subliminal influences upon conscious cognitive behavior. *J. abnorm. soc. Psychol.,* 1958, *57,* 255-266.

3. Rogers, A. H. and Walsh, T. M. Defensiveness and unwitting self-evaluation. *J. clin. Psychol.,* 1959, *15,* 302-304.

4. Rosenzweig, S. and Kogan, Kate L. *Psychodiagnosis.* New York: Grune & Stratton, 1949.

5. Rosenzweig, S. Revised norms for the adult form of the Rosenzweig Picture-Frustration Study. *J. Pers.,* 1950, *18,* 344-346.

Received January 7, 1959

Rorschach Movement Responses and Inhibition Processes in Adolescents

GEORGE SPIVACK, MURRAY LEVINE, JEAN FUSCHILLO, AND ANN TAVERNIER
The Devereux Foundation Institute for Research and Training, Devon, Pennsylvania

Utilizing Rorschach's (9) implied triadic relationship among motor behavior, motion perception and cognitive processes, and Werner and Wapner's (15) sensory-tonic theory, past research has shown a relationship between voluntary inhibitory processes, Rorschach *M* and overt behavior. In the initial study, Meltzoff, Singer and Korchin (8) demonstrated that self imposed motor inhibition is followed by an increase in Rorschach *M*. This finding was essentially corroborated by Singer, Meltzoff and Goldman (11). Krus, Weiner and Wapner (3) demonstrated the converse, that perceived motion decreased following motor activity. In the initial study (8) it was also demonstrated that the number of spontaneously given *M* correlated with the length of time habitual movement was voluntarily inhibited. This particular relationship has been supported several times by Singer and collaborators (10, 12, 13, 14) in different contexts, and it has also been demonstrated in these studies that both spontaneous Rorschach *M* and the capacity to voluntarily inhibit a motor act are correlated with the degree of control of overt behavior exhibited by hospitalized schizophrenic patients. Concurrently Levine and Meltzoff (4, 6) have demonstrated relationships among the ability to voluntarily inhibit a thought, the ability to inhibit a motor act, and Rorschach *M*. Meltzoff and Litwin (7) have rounded out the picture by showing that *M* is also an indicator of the ability to control the overt expression of a pleasant affect.

Litwin (5), noting that all of the prior work had been done with adults, examined some of the previously obtained relationships within a developmental framework. Using three groups, six, ten and fourteen years of age, she demonstrated that with increased age there was an increase in motor inhibition, *M* tendency, and the ability to inhibit affective expression. No increase with age in the ability to inhibit cognitively was noted. It was interesting to note however, that none of the inter-relationships previously demonstrated with adults could be replicated. She concludes that " . . . the ability to inhibit does not stabilize until adulthood is reached." (5, p. 49), and that *M* may not take on the highly specific meaning of a fantasy equivalent for overt activity until the personality itself becomes stabilized with respect to the ability to inhibit.

The purpose of the present study was to attempt a replication of prior work in this area in a group of adolescents, older than Litwin's population, but younger than the adult groups employed in all the previous research. Specifically the question was asked whether in such a group voluntary inhibition of a motor and cognitive activity would lead to an increase in *M* and whether the ability to voluntarily inhibit a motor act is related to spontaneous *M* tendency. The question was also asked whether there would be relationships among *M*, motor inhibition, a measure of cognitive inhibition, and ratings of impulsiveness, compliance and activity level in overt behavior.

METHOD

Subjects

The experimental group consisted of 47 males, ranging in age from 11 to 19, with a median age of 15 years, 7 months. The IQs ranged from 83 to 134 with a mean of 105. The *Ss* were all in residence at a treatment center for emotionally disturbed children. None of the Ss were or had been psychotic, and none had known brain injury. The diagnoses were mainly of personality and neurotic disorders.

Procedures

The experimental situation was presented to S as an attempt to develop some new tests. S was told that none of the results would become a part of his permanent record in order to minimize any resistance to completing the procedures.

All Ss were administered a pair of Rorschach cards with instructions to tell E "what three animal or human figures you can find here". The Es pressed for responses when necessary. Following this, the cognitive inhibition task (CIT) was administered. A list of ten easy paired associates was read to the subject. After the associates were learned to a criterion of one perfect recitation, S was asked to respond upon presentation of the stimulus word with any word *other than* the learned associate. CIT was taken as the average time interval between the presentation of the stimulus and the response for the ten pairs. Since this time is presumably taken up in part by the process of finding a new associate, a measure of word association time (WAT) was obtained, either following or preceding an interval filled with other tasks. WAT was computed from the mean response time to a list of ten other words. Following cognitive inhibition two more Rorschach cards were administered with the same instructions. After this, the motor inhibition task was administered. Essentially it required that S write the phrase "New Jersey Chamber of Commerce" between two lines, one half inch apart, no letter to be larger than the space between the two lines. S was instructed to write as slowly as possible without stopping, and without taking the pencil off the paper. These instructions were repeated throughout the task. If the phrase was completed in less than five minutes, S was instructed to try again. This procedure was continued until each S had five minutes of voluntary motor inhibition before the third pair of Rorschach cards were administered. As in past research, the measure of motor inhibition ability (MIT) was the number of seconds S took in writing the phrase the very first time he attempted it. The final pair of Rorschach cards yielded the measure of M following voluntary motor inhibition.

The pairs of Rorschach cards employed were II and IV, I and III, and VII and VIII. The order of pairs was systematically varied to ensure that each set appeared in each condition an equal number of times, thus permitting some control over the stimulus value of the blots themselves. No inquiry was made following administration. The responses were scored independently by two clinicians utilizing essentially the method of Klopfer and Kelley (2).

Overt behavior ratings were obtained for each S from his home supervisor, his school supervisor, and his recreation supervisor. Each supervisor was asked to decide which end of the continua of "impulsiveness", "activity level" and "compliance" tended to best characterize the S in question. Essentially then each supervisor was asked whether S tended toward immediate gratification of his desires, not considering the future and generally living by a pleasure principle, or not; whether S tended to be quick in movement, physically active and prefer activities involving physical movement, or tended toward the antithesis of these; and whether S generally followed instructions and obeyed rules with a minimum of resistance, or was defiant and resistant to direction and rules.

RESULTS

Table I presents the baseline and post-motor and post-cognitive inhibition Rorschach data. Since there was a significant increase in the total number of Rorschach responses (p = .06)

TABLE I – Rorschach Response Totals for Three Experimental Conditions
(N = 46)

Conditions	R	M			FM			m		
		No.	% of R	% Ss	No.	% of R	% Ss	No.	% of R	% Ss
Baseline	208	27	13	54	9	4	17	0	0	0
Post-Motor Inhib.	257	38	15	46	28	11	37	5	2	10
Post-Cog. Inhib.	216	35	16	54	15	7	24	2	1	4

following motor inhibition, all calculators were made controlling for *R* through the use of percents.[1] There is no significant change in *M*%, or percent of people giving *M* following motor or cognitive inhibition, although the direction of difference in *M*% is consistent with the hypothesis. There is a significant increase in the percentage of people giving *FM* following motor inhibition (p = .01), and a similar tendency following cognitive inhibition, which is not statistically significant. The percentage of *FM* responses increases following inhibition, but not significantly. The percentage of *m* responses was too small to warrant statistical comparison, but it is noteworthy that all *m* responses appeared following the inhibition tasks. The hypothesis that prior motor or cognitive inhibition will increase *M* production is not supported, although such inhibition appears to increase *FM* and *m* in this group of adolescents.

The relationship between spontaneous *M* tendency and the ability to inhibit motorically was tested by chi square, with *R* held constant by means of the roving median technique (1). No significant relationship obtained. Similarly, no relationship obtained between spontaneous *M* tendency and the ability to inhibit cognitively. Since a significantly greater percentage of *S*s gave *FM* responses following motor inhibition, the relationships between *FM* and the ability to inhibit both motorically and cognitively were tested. Neither relationship proved significant. There was no relationship between motor and cognitive inhibition.

There were no significant relationships between *M*% or the ability to inhibit motorically and any of the three ratings of overt behavior. Since *FM* was shown to increase following motor inhibition, the relationship of *FM* to the behavior ratings was also examined. *FM* was unrelated to the rating of impulsiveness and compliance, but there was a tendency for *FM* to be related to the rating of activity level (p = .07). Fifty per cent of those rated *inactive* gave *FM*, while only 20 per cent of those rated active gave any *FM* spontaneously. The measure of cognitive inhibition was significantly and negatively related to the rating of impulsiveness (p = .01), but not to the other two ratings. There was no significant relationship of WAT to the rating of impulsiveness, and it was therefore not necessary to control WAT in relating CIT to impulsiveness.

When the spontaneous tendency to give *M* and *FM*, the measures of inhibition, and the three ratings of overt behavior were related to chronological age, only the relationship with *FM* proved significant (p = .001). Whereas 50 per cent of the older *S*s *spontaneously* gave at least one *FM* response, only 8.6 per cent of the younger *S*s gave at least one *FM* response spontaneously. Despite this, the overall increase in number of people giving *FM* following motor inhibition was spread proportionately between the younger and older groups.

DISCUSSION

In this group of adolescents we cannot replicate the well established finding with adults that self imposed motor inhibition is followed by a statistically significant increase in Rorschach *M*. The difference in results cannot be explained on the basis of differing experimental conditions since the instructions and tasks we used were nearly identical with those used in previous work. Also, the number of *S*s used is substantially larger than used in several prior studies, which would tend to reduce the possibility that inconsistent results are due to a generally low reliability of measurement. These results may be due to the fact that the present population consisted of emotionally disturbed *S*s, and that if normals had been used as in the prior studies the results would have been replicated. Such an explanation can be supported or rejected only by further experimentation. However it should be noted that other deductions from the general theory of inhibition have been confirmed in normals (6), hospitalized schizophrenics (13, 14) and outpatient veterans with psychiatric diagnoses (4).

---

[1] Instructions were intended to elicit the same number of responses (three) from each *S* to each Rorschach card in order to eliminate the necessity of controlling for *R*. Unfortunately, our *S*s insisted on doing things their way with a cavalier disregard for the niceties of statistical design.

An alternate explanation would be that the structural relationship between the inhibition of motor activity, and empathic motion perception or fantasy does not take form until maturity is reached. Such a notion is further supported by the present finding that the tendency to give *M* spontaneously is unrelated to the length of time motor activity is inhibited. Litwin (8) found the same lack of relationship in her pre-adolescent normal group. Thus, although *M* has been considered to be both a product and a measure of the delay function of the ego, or of the inhibition ability in adults, it may have a rather different significance in adolescents, or perhaps more broadly, pre-adults.

The finding that cognitive inhibition ability is unrelated to both motor inhibition ability and *M* tendency agrees with Litwin's findings in younger children. Characteristics of overt behavior which have been found to be correlated with *M* and motor inhibition in adults are also found to be unrelated in adolescents. The fact that one relationship, that between cognitive inhibition ability and behavioral impulsiveness, was found to be significant suggests that perhaps the beginnings of a consistent pattern of inhibitory processes may take place during adolescence. However, the disparity between findings with children and adults stands out most clearly and points to the hypothesis that a general inhibitory ability is not pervasive in personality until adulthood.

Our findings that *FM* and *m* did increase following motor inhibition is similar to what has been reported with adults. This raises the possibility that non-human movement responses have the same significance in adolescence as *M* responses seem to have in adults. Some of our data do not support this hypothesis. Spontaneous *FM* was not related to the ability to inhibit motorically or cognitively. Thus *FM* does not have the same correlates in adolescents as *M* does in adults. On the other hand, *S*s rated as motorically active were less inclined to give *FM* responses spontaneously, paralleling the relationship of *M* to motor activity in adults (12, 14). At this point, the possible functional equivalence of *FM* in adolescents to *M* in adults remains to be demonstrated.

SUMMARY

The purpose of this study was to examine the relationship between Rorschach movement responses, voluntary inhibition of motor and cognitive responses, and ratings of impulsiveness, compliance, and general activity level in a group of adolescents. Rorschach *M* responses did not increase following motor inhibition, although *FM* and *m* responses did. Spontaneously given movement responses were unrelated to measures of inhibition. Ability to cognitively inhibit was inversely related to ratings of impulsiveness, and spontaneous *FM* tendency was related to ratings of general activity level. It is concluded

that the Rorschach *M* response has a different significance in adolescents than in adults. The hypothesis was formed that the structural relationship between the inhibition of motor activity and empathic motion perception or fantasy does not take form until maturity is reached, and that general inhibition ability does not become a pervasive trait in personality until adulthood.

REFERENCES

1. Cronbach, L. J. Statistical methods applied to Rorschach scores: a review. *Psychol. Bull.*, 1949, *46*, 393-429.

2. Klopfer, B., and Kelley, D. M. *The Rorschach technique.* New York: World Book Co., 1942.

3. Krus, D. M., Werner, H., and Wapner, S. Studies in vicariousness: Motor activity and perceived movement. *Amer. J. Psychol.*, 1953, *66*, 603-608.

4. Levine, M., and Meltzoff, J. Cognitive inhibition and Rorschach movement responses. *J. consult. Psychol.*, 1956, *20*, 119-122.

5. Litwin, Dorothy. Sensory-tonic theory as related to the development of inhibition and social maturity. Unpublished doctor's dissertation, New York University, 1957.

6. Meltzoff, J., and Levine, M. The relationship between motor and cognitive inhibition. *J. consult. Psychol.*, 1954, *18*, 355-358.

7. Meltzoff, J., and Litwin, Dorothy. Affective control and Rorschach human movement responses. *J. consult. Psychol.*, 1956, *20*, 463-465.

8. Meltzoff, J., Singer, J. L., and Korchin, S. J. Motor inhibition and Rorschach movement responses: a test of the sensory-tonic theory. *J. Pers.*, 1953, *21*, 400-410.

9. Rorschach, H. *Psychodiagnostics.* New York: Grune & Stratton, 1942.

10. Singer, J. L., and Herman, J. Motor and fantasy correlates of Rorschach human movement responses. *J. consult. Psychol.*, 1954, *18*, 325-331.

11. Singer, J. L., Meltzoff, J., and Goldman, G. D. Rorschach movement responses following motor inhibition and hyperactivity. *J. consult. Psychol.*, 1952, *16*, 359-364.

12. Singer, J. L., and Opler, M. K. Contrasting patterns of fantasy and motility in Irish and Italian schizophrenics. *J. abn. soc. Psychol.*, 1956, *53*, 42-47.

13. Singer, J. L., and Spohn, H. E. Some behavioral correlates of Rorschach's experience type. *J. consult. Psychol.*, 1954, *18*, 1-9.

14. Singer, J. L., Wilensky, H., and McGraven, Vivian G. Delaying capacity, fantasy and planning ability: A factorial study of some basic ego functions. *J. consult. Psychol.*, 1956, *20*, 375-383.

15. Werner, H., and Wapner, S. Sensory-tonic field theory of perception. *J. Pers.*, 1949, *18*, 88-107.

Received March 3, 1959

BOOK REVIEWS

Ames, Louise Bates, Metraux, Ruth W., Walker, Richard N. *Adolescent Rorschach Responses.* New York: Paul B. Hoeber, 1959, xi plus 313. $8.50.

This volume follows the same general format and style as its two companion volumes, *Child Rorschach Responses* and *Rorschach Responses in Old Age.* The book opens with a brief discussion of the pertinent literature and the subjects and methods used in gathering and treating the data. The normative data presented are a direct continuation of the data presented in the *Child Rorschach Responses.*

Seven hundred Rorschachs were obtained from fifty boys and fifty girls at each age level, from 10 to 16. There were only 398 different subjects because some children were tested at more than one age. Of the records, 429 were given by only 127 children. Half the records were from children of professional workers and over three-fourths by subjects whose fathers had professional, semi-professional, or managerial occupations. All children came from a small geographical area. Thus, as the authors themselves state, "The subjects . . . are not a representative sample of adolescents." Numerous tables are given to provide comparative data, for example, the percentage of subjects who use specific locations and determinants and percentiles for the major variables in terms of the actual number of responses. The tables were well chosen to provide the type of information which is useful for the reader but there is question in this reviewer's mind whether such detailed statistics do not unwittingly imply representative sampling, which is denied earlier by the authors.

There is, then, a general discussion of the detailed findings according to area, determinants, content and the like. This presentation is followed by an analysis of the data by year levels with sample records for a boy and girl at each year level. The final section presents a longitudinal series of records for twins of opposite sexes, and is followed by a brief discussion and summary. A minor but strange detail is noted in the use of percentages in Tables 14-17. In the last table it is made plain that the percentages add up to 100%. In the first three this is not indicated and the sums vary from 98 to 101 per cent without explanation of this variation.

Since the general criticisms of this volume are the same as those indicated in the review of "Rorschach Responses in Old Age" published in this Journal (Vol. 19, No. 4, pp. 78-79), they will not be repeated here in detail. The use of a mode of scoring unfamiliar to most clinicians in the United States is the one major fault which has not been corrected.

An interesting finding is that the Rorschach responses during this period of 10 to 16 reveal marked sex differences as compared with the records of subjects below 10 years of age. Although this may not be a surprising finding in terms of developmental psychology, it is notable to observe that these differences are so evident in the Rorschach protocols. Thus far such differentiation has not been established for the late adolescent or the adult. It is worthy of speculation to consider whether the variation noted in this age period implies that the Rorschach is picking up this evidence because it is part of an active psychological process or because it is a conflictual area at this time. Does this mean that the evidence is not noted strikingly in Rorschach responses of adults because the differentiation is completed and settled into the personality? The authors report further that the general trend in the years 10 through 16 are toward maturation but that the process is a markedly uneven one. The years 12, 14 and 16 seem to be expansive ones for the adolescent whereas the years 13 and 15 tend to be relatively introversive ones, so that the pattern is one of fluctuations rather than a consistent maturational one. There are still many responses suggestive of immaturity, so that "in many ways Sixteen seems considerably more like Ten than like our expectation of the normal adult." The authors speculate that this pattern may stem from their use of a sample of individuals of relative emotional immaturity, but they raise the important question whether the adult standards now in use may not be in need of more careful investigation. A rough comparison of these norms of adolescents with those presented by McFate and Orr in this Journal (Vol. 13, No. 3, pp. 302-319) is possible. The percentages of subjects using FC, CF, M, and FM individually and in the relationship of FC to CF and M to FM as they may relate to maturation are not consistent with the Ames data. However, it must be pointed out that the McFate and Orr data are also based on subjects from a small geographical area and with many records from a relatively small number of subjects. Clearly, if normative data are to be used, much exploration is needed not only to have an adequate sampling but to understand the meaning of samples such as these. Certainly, these normative data, if correct, have important implications not only for Rorschach interpretation but for developmental psychology as well. The norms presented in the two books dealing with non-adults are presented with abstracts of interviews which in conjunction with the Rorschach data suggest that the developing child goes through periods of such turbulence and trial as are not customarily implied in discussion in books of developmental psychology except for the pubertal period. In this sense, for this reviewer the volumes dealing with children and adolescents have implications far beyond the Rorschach norms, as such.

MORTIMER M. MEYER
Los Angeles

Bass, B. F. and Berg, I. A. *Objective Approaches to Personality Assessment.* New York: D. Van Nostrand, 1959, pp. x-233. $4.95.

The lion, the king of the beasts, summoned his subjects to him. He had something important to tell them and had planned for days what to say. His first utterance was full of majesty and strength but alas, his powerful roar chased the smaller animals away into distant land and they never benefited from their king's wisdom.

The lions of psychological measurement gathered at the Louisiana State Symposium in 1958 but proved to be educators as well as experts as they pitched their ideas at a level comprehensible to graduate students.

Robert Watson leads off with an historical review of the search for objectivity in personality measurement. He takes us from the brass-instrument days when objectivity was no problem, since observed behavior was the only concern, through to our present emphasis on projective techniques and the multiple proposals for evaluating objectivity.

The major disillusionments reflected by trends in testing are seen in the shift from sensory-motor tasks to intelligence tests and later to personality questionnaires, from these questionnaires to projective techniques, and now away from projective techniques.

Watson is circumspect in his search for objectivity and kind to us projective test users. He denounces the frequently espoused dichotomy, objective vs. projective. "Many 'objective' tests are not objective in any of the senses we find the word to have been used and projective test materials may be treated objectively."

Donald Super analyzes and classifies the approaches to personality assessment in a comprehensive manner. Projective techniques are not esteemed but Super is not ready to see them abandoned. His brief review of predicting future behavior (personality) from biographical inventories is interesting.

Raymond Cattell, imbued with the importance of theory construction (his own, of course) starts out bravely asserting that no measurements are worthwhile unless they relate to meaningful personality structures. Being uninterested in those of us who get paid for predicting behavior, he addresses those who are interested in theory. For him, theory is the development of a conceptual perspective that will integrate factor analytic findings.

We are reminded that the clinical method is a multivariate one that, "... lacks scientific rigor, proceeding by intuition and fallible memory ..." Offering hope to disillusioned clinicians he says, "The salvation of the clinical method lies in filling out its cloudy procedures by structural statistics, decidedly more complex, incidentally, than those known to univariate methodology."

Cattell clearly states the aims of his laboratory and his procedures for developing theoretical formulations. We are properly cautioned not to regard the factor analyst's failure to translate his findings into clinical terms as disinterest but should recognize that division of labor is necessary for him to accomplish his staggering task of concept development and integration.

Louis McQuitty presents his pattern analytic methodologies in a simple, yet appealing manner. It is a welcome relief from the interminable listing of traits by theorists since it is a methodology. He does not discuss personality theory nor does he present his own findings. Still, it is a fine source for developing an understanding of this approach.

Irwin Berg sketches, in an interesting manner, the variety of test materials or item contents that have shown some relation to personality. He concludes, "... that there is nothing of special value in particular item content for objective personality and similar tests." In repeating his "deviation hypothesis," all that is required of an item is that a sample of subjects will demonstrate, "... departures from an established pattern of bias." Illustrating his main points is his Perceptual Reaction Test which employs abstract designs drawn with ruler and compass. The subject's responses indicating degree of like or dislike are related to personality features.

Allen Edwards also begins by attacking the principle of dichotomizing tests into projective and objective. "...the term 'objective' implies nothing about the nature of the test materials...It refers only to the method of scoring responses." Personality inventories are viewed according to their construction: factor analytic, criterion group, or construct. There follows a clear description of the concept of social desirability, particularly as applied to the MMPI.

Wayne Holtzman discusses possible convergence of projective and psychometric methods. The six pages on Rorschach chiefly concern research findings with group administered or objectively scored Rorschachs. In concluding, Holtzman describes his new Inkblot Test, designed to overcome many objections to conventional Rorschach testing. A single response to each of 45 blots provides the protocol, which is scored on six variables. They are, Location, Form Appropriateness, Form Definiteness, Color, Shading, and Movement Energy Level. His approach seems fairly successful in avoiding difficulties encountered in earlier attempts by others to objectify ink-blot testing.

Bernard Bass reviews concepts and methods of evaluating leadership. He uses a simple, yet ingenious task. While seemingly narrow, it provides for a variety of content. He asks a group to rank five things according to a stated ordering principle, such as population of five cities. First, each person makes his own ranking, then through discussion a concensus is reached, and finally each member records his own ranking again. Three quantitative measures are derived: Successful Public Leadership, Successful Private Leadership, and Relative Success as Leader.

Interesting relationships between the scores have been found with measures of esteem, rated success as leader, rated attempts at leadership, and others. The value of the approach is demonstrated by the research that has been generated by it to produce a rather tight microsystem.

William Hunt, in his good-natured way, criticizes Meehl for being so pessimistic about the value of clinical judgment. Meehl "...compares selected tests against unselected clinicians." Hunt's kind respect for people leads him to say, "...I feel that Meehl views the exercise of clinical judgment as a necessary evil, whereas I view it as a fascinating phenomenon with a genuine predictive potential."

Hunt and his colleagues demonstrated in several studies that Navy adjustment was predicted by clinical judgment. We see his continuing interest in the glimpse he gives us of his present promising pursuits. His approach is to see how clinicians judge differently than undergraduates, what influences the judgments, and how can the judges be taught to improve.

Starke Hathaway reflects on the diagnostic role of the psychologist. He emphasizes the realistic need for increasing our efficiency through the use of "psychometrists" as test administrators. Another point, particularly relevant to projective techniques, is, "We should be much freer to not make statements from test data...refuse to use a proportion of the scores because they fall in intermediate areas."

Hathaway urges us to increase testing efficiency by improving the test as well as the diagnostic criteria because, "...if diagnostic or other contributions of a testing procedure do not sufficiently allay the insecurity of the clinician, do not provide him with useful methods of procedure, or do not protect him from professional danger in proportion to the energy and time that he must invest, he can be expected to abandon the procedure."

James Miller is impressed by the intensive scales of physics so he discusses how some of our personality concepts could be handled in a more quantitative fashion. He then proceeds to discuss the automobile driving battery at Michigan, that employs uniformly presented stimuli and quantitative scoring. Next he discusses six other instrumental approaches they are using for evaluating behavior. Miller seems straddled between a holistic commitment and a desire for objective measurement and is attempting elsewhere to establish a bridge of theoretical reconciliation.

Harold Pepinsky does a courageous job of summarizing the symposium in terms of contrasts and similarities in the viewpoints expressed. He closes on an optimistic note which I share. "Certainly by comparison with the OSS and VA assessment research of the previous decade, there is ample evidence furnished us here of significant accomplishment in the development of a methodology for the objective assessment of human personality."

To the clinician who is satisfied with the vague concepts encountered in projective testing, the book offers nothing. To those admirable people who have a large portion of themselves invested in current test procedures, yet will never be content until objective validity and consistency are established and inter-communicability demonstrated, the book suggests fruitful avenues to occupy them for the coming decade.

WILSON H. GUERTIN
Supervisor, Research Unit
Psychology Service
V. A. Hospital
Knoxville, Iowa

Bellak, L. (Ed.), Ostow, M., Pumpian-Mindlin, E., Stanton, A. H., and Szasz, T. S. *Conceptual and methodological problems in psychoanalysis.* New York: Annals of the N. Y. Academy of Sciences, 1959, p. 973-1134.

This slender volume represents a valiant attempt at a systematic statement of psychoanalytic theory and, in the words of the chairman of the conference on which the monograph is based, "to put the house in order." The book reflects a new and laudable trend among psychoanalysts who have for many years been contributing clinical and theoretical articles and have amassed a tremendous literature, to somehow find the trees which became indistinct because of the forest, to integrate the various theoretical propositions, concepts and constructs and state them clearly in an orderly fashion.

The basic concepts of psychoanalytic theory are dealt with in five papers. Three papers (by Szasz, Stanton and Pumpian-Mindlin) are devoted to "An attempt at the systematic restatement of the Libido theory." The fourth paper, by Bellak, is on the "unconscious" and the fifth (by Ostow) on Freud's "structural model: Ego, Id, and Superego." Prepared discussions (though not clearly so labelled in the text) follow each presentation. Sanford's discussions are of the first and third papers, Wolfenstein's of the second paper. Brenman discusses the fourth, and the final paper is dealt with by Ekstein. In addition, other conference participants such as Kubie, Mirsky and Leites as well as unnamed "panel members" enter the fray and provide the reader with a lively and spirited exchange of ideas. This aspect is reminiscent of the reported discussions in the *Josiah Macy* series.

Szasz's paper is concerned with a critical analysis of "The concept of libidinal zones, aims and modes of gratification." This paper is by far the most critical one of some aspects of psychoanalytic theory, for it does not only set out to order concepts but to question and demolish the validity of some of them as well. The author considers the libido theory as "a primitive psychosomatic hypothesis" and questions the verification (and verifiability) of "physical changes in body parts." He rejects pleasure as the aim of the libido and expresses preference for Fairbairn's formulation that the libidinal aim is object contact. Finally he makes a plea for a redefinition of the libido theory based on "verifiable observations." Sanford, in his discussion, takes Szasz to task for going beyond an analysis of the libido. He also doubts that the suggestion of a new libido theory, as proposed by the speaker, came from an awareness of the deficiencies of the old one.

"Propositions concerning object choices" is the subject of a well-organized paper presented by Stanton. He discusses in some detail the discharge of libidinal drives with objective objects as well as with representations of objects or self. In this connection he also deals with the phenomenon of displacement, the consequences of libidinal blocking and sundry related issues. He is also quite critical of the reductionist trend with respect to drives by pointing out the insufficiency of present-day knowledge for such an operation. Finally, problems regarding choice of object in later life with particular reference to group membership constitute the closing section of this presentation.

Wolfenstein's discussion deals with systematic issues such as distinction between propositions and definitions between the observable and unobservable and is also concerned with "emotional" obstacles to the clarification of psychoanalytic language. She also proposes the cataloging of all possible observable combinations of the four variables that enter into object choice — object, aim, role and goal.

The next contribution (Pumpian-Mindlin) is entitled "Energy and Structure in Psychoanalysis"—a title directly borrowed from Colby who published a monograph by the same name. In this presentation, much of the same historical material is reviewed, tracing the development of Freud's thinking, with respect to the energistic sources underlying behavior, over a period of some 40 years. Consonant with the current vogue (zeitgeist?) Pumpian-Mindlin is preoccupied with Freud's conceptual "models." He leads us from Freud's earliest "neuronal structural model" through the later closed system type of "hydraulic model" to the later model of 1923 which turns into an open system in which the psychic apparatus assumes field theory characteristics (i.e. "the space in which energy operates is more important than the nature of the energetic particles themselves"). Throughout, the author notes the parallelism between changes in psychoanalytic models and developments in the physical sciences.

Sanford, in his discussion is very critical of the "libidinization" of theoretical models and of the tendency to utilize terms from the physical sciences in psychoanalytic theory construction. He advocates a more adequate conceptualization of inner life rather than the construction of a general theory similar to the attempts of contemporary academic psychology. According to him, Freud relinquished his earlier "models" not because of their relative inelegance, but because the theory was not efficient in everyday application in clinical practice.

Bellak's paper represents a straightforward, systematic discussion of the unconscious, its development, its configurational and physiological aspects and its relationship to psychoanalytic motivational theory. He suggests the application of probability theory in the study of the relationship between primary and secondary process. He too is somewhat concerned with models when discussing "the mobility of cathexis of conscious and unconscious functioning" and advocates the discarding of the older hydrodynamic model in favor of modern electronic ones "of scanning, interrelated with perceptual theories of motivation, gestalt formation and neuronal behavior."

Finally, Ostow describes Freud's "structural model" (Ego, Id, and Superego) in detail, in an orderly fashion, but with little critical appraisal. He suggests that it is "possible to look for correlates in neuroanatomy and neurophysiology" for the several psychic structures. However, such a task as well as the understanding of ultimate nature of the Id, ego and superego and their functions is still in the nature of a program for the future.

It is extremely difficult within the confines of a brief review, to report in detail the lively, learned and occasionally tangential discussions that followed each contribution. The overall impression was that of an attempt at a high-powered theoretical and critical examination of basic concepts in psychoanalytic theory with the aid of tools from modern science, psychology and philosophy of science.

Needless to say that this symposium has not brought final intergation to psychoanalytic theory nor has it brought its conceptual "house in order." Such a task is herculean and would require concerted and persistent effort for a good many years to come. A beginning toward some semantic clarification has been made and is reported in this meaty volume. As to the reading of it—the going is rough; but, the courageous adventurer may be rewarded for his efforts with a sweeping view of the landscape from the top of the mountain.

A. I. Rabin
Michigan State University

Buros, Oscar K. (Ed.) *The fifth mental measurements yearbook.* Highland Park, N.J.: Gryphon Press, 1959.

The latest achievement of Buros and his huge entourage of reviewers has given us another useful summary of tests and texts in the field of measurement. The eighth of an increasingly broad and intensive series, it emphasizes psychological and educational tests and books, published or revised during the period of 1952 through 1958.

The major portion of the book, some 956 double-columned and highly legible pages, lists and discusses 957 tests. Each test is described briefly in terms of forms, content, intended uses, costs and publishers. A fleet of 350 reviewers selected by the editor wrote 698 original reviews. These are supplemented by excerpts from reviews previously published in the journals and lists of references which deal with constructional, normative and other relevant data helpful to the person who wishes to select or evaluate tests for specific purposes.

In attempting to be fair to the tests, to provide a broad perspective of the testing movement and to encourage improvement in tests, the editor has provided a plurality of reviews for most tests. Generally, the reviews seem to be objective, insofar as this can be expected from persons who inevitably have their own convictions about what a test should be and do and requirements of validity, reliability and normative data. In some cases the background of one or more of the test reviewers may seem rather far afield from the kind of experience which would foster realistic and sophisticated appraisal of the test *in situ* rather than on sheer structural statistical grounds. Yet most such reviews are complemented by others written by appropriately specialized experts. All this is to the good. Out of the opposition of uncritical acceptance and overcritical insistence on formal structure can come only more ingenious tests and careful standardization.

The coverage is restricted to the English language (though many reviewers are foreign), but broad in scope: achievement batteries, character and personality, non-projective tests (126 pp.), projective techniques (112 pp.), languages, arts, intelligence, sciences, skills, aptitudes, vocational tests. Previous editions have listed 1219 Rorschach references. The present volume adds another 918, presents original critical discussions of the Rorschach by Beck, Eysenck, McCall and Shaffer (certainly a healthily heterogeneous group) and describes variant forms and appurtenances that have been added to the Rorschach armamentarium. A similar kind of treatment is accorded the TAT. New and less popular tests are discussed with appropriate brevity. Here is a wonderful opportunity to obtain an overview of the field of projective techniques.

The second major portion of the book (261 pp.) is devoted to the listing of 485 books on measurement and specific tests with 535 excerpts from book reviews. Many books are listed without reviews, but with references. A number of the particularly significant books receive multiple reviews.

This reviewer is not in a position to evaluate either the coverage or treatment of the psychometric tests. If, however, the coverage of projective methods is an example, all is in fine order. We are impressed by Buros' heroic and successful efforts to present a picture of the entire field of English tests at both the descriptive and critically evaluative levels. Buros' goal of fostering the improvement of quality in the American testing movement can not fail to be achieved if those who build, validate, administer, interpret or perform research with tests will read this book and take it seriously. For those who wish to know where the testing movement is going, what has been done in the way of coping with recurrent problems, what new ideas and trends have sprung up, Buros' book is essential. Clinical psychologists would do well to refer to it frequently in order to achieve an informed perspective even on those tests which they feel they know well. There is simply no other source for such a rich smorgasbord of information in the field of measurement. The collaborative efforts of Buros' devoted staff have collected and organized information of such magnitude that they serve somewhat the same labor-saving role as purveyors of information that electronic computers have served in large-scale research. For his contribution as leader in this grand enterprise, Buros deserves our deepest appreciation.

BERTRAM R. FORER
Executive Editor
Journal of Projective Techniques

Caligor, Leopold. *A New Approach to Figure Drawing.* Springfield, Ill.: Charles Thomas, Publisher, 1957, pp. 148, $4.50.

This book constitutes a closely-reasoned, soundly-balanced presentation of the newest offspring of the projective drawing family which already includes the Draw-A-Person, the H-T-P, the Draw-A-Family, the Draw-An-Animal, the Unpleasant Concept Test, the Drawing Completion Test, and other innovations. The Eight-Figure-Redrawing Technique, presented in this book, requires the subject to make a series of eight drawings of the human figure, basing each drawing on the previous one, which can be seen through a sheet of onion-skin paper. Thus, the subject sees his first drawing through the paper on which he draws his second figure. The second figure then serves as a drawing stimulus showing through the next sheet laid over it for the third drawing, and so on. Instructions are to "change it in any way you like." With the preceding drawing visible to the subject, he may trace it, modify it, or ignore it completely. As a subject proceeds through the series, censorship at times fluctuates and underlying feelings may seep through. Varying characteristic modes of coping with situations may be elicited. The final product provides a patterning of continuity and breaks in functioning level.

The author (and innovator) offers his interpretations as hypotheses only, and indicates that a normative group has not yet been provided. Interpretations are flatly offered without the usual backing by a discussion of rationale or theory to marshal conviction. Thus, the publication is trimmed down to dimensions suggestive more of a research manual than a book.

Interpretations are taken up in regard to structural, as opposed to content, areas. Thus, placement, size, line pressure, balance, and other expressive features are focused upon and the interpretations offered are the conventional ones which the reader probably will have previously encountered. What is of value are the strides toward an objective scoring system which, when based upon fully eight drawings of the same concept—namely a person—gains in utility. A kit, which sells for six dollars, goes along with the book and includes thirty-five sets of test prococol blanks, scoring forms, and cardboard inserts (which are used to screen all but the last drawing from showing through the next blank onionskin paper laid upon it). What struck the reviewer as particularly helpful are scoring masks which are placed beneath a drawing to help more objectively rate variables such as body angle, placement, line pressure, and symmetry.

For the most part, the book concerns itself with a series of thirty-six objectively scorable dimensions, rated along a five point scale.

The quantitative scoring system is not as detailed as Buck's (1), but it does go along with the above-mentioned tools providing for greater objectivity and, hence, greater reliability in scoring.

Elsewhere (2) the reviewer has appraised Caligor's technique as follows:

> The results of Caligor's study raises pertinent questions concerning the assumption that the sex of a single figure stresses the subject's sexual identification. Caligor's results imply that the true level of psychosexual identification may at times lie more deeply buried under the beginning drawings and has various emphasis on different personality levels. The subject's eight redrawings thus constitute an attempt to plumb deeper personality levels . . .
>
> All in all, if the Eight-Card-Redrawing Test is reserved for subjects who appear to enjoy drawing, a rich yield of data may be expected to be the rule rather than the exception. In my experience, I have not found it often worth the time and effort with subjects who do not like to draw. A task which asks such a subject to draw eight figures, in addition to whatever other drawing techniques have been administered, serves only to irritate and place an undue strain upon rapport. When used with subjects who take to drawing, however, it often proves to be one of the most rewarding diagnostic techniques in the projective drawing battery.

To the above, I might now add the impression that Caligor's book does not appear to do full justice to his own technique. The book treats only expressive aspects of drawing (although content is touched upon in the three case studies presented at the end of the book). Thus, what for the reviewer is the real drama of the Eight-Card-Redrawing Technique, the one that lies in the shifts in content as one goes from one drawing to the next, is not given the focus it deserves.

The writing style is somewhat academically-toned, and sprinkled with terms like "lowered environmental cognizance" and sentences like: "Long strokes reflect impulsivity-lability in response to anxiety and stimulability-impulsivity to tactile-sensuous needs."

In passing, the reviewer might mention that he has been curious, since first learning of the Eight-Card-Redrawing Test procedure, as to why Caligor has formed his technique around eight, rather than five, ten, or some other number of drawings. The answer is not given in the book.

An overall impression is that for those who employ drawings in a quantitative way, there is here a ready-made tool for doing research on, or with, drawings—a handy book and kit to have.

EMANUEL F. HAMMER, PH.D.
New York City

REFERENCES

1. Buck, J. N. The H-T-P Technique: A qualitative and quantitative scoring manual. *J. clin. Psych.*, Monograph Supplement, No. 5, 1948.

2. Hammer, E. F. *The Clinical Application of Projective Drawings.* Springfield, Illinois: Charles Thomas, Publisher, 1958.

Hallower, Molly. *Personality Change and Development.* New York and London: Grune & Stratton. 1958. 383 pp. $10.00.

Dr. Harrower is well-known to psychologists as a leader and pioneer in the use of projective techniques. This latest book, to be followed by a companion volume, proposes to study behavior change as a result of psychotherapy and/or environmental change, through the use of the Rorschach, Human Figure Drawings, Szondi, and Most Unpleasant Concepts tests. Described as a study, the book proposes a number of extremely general hypotheses such as the existence of a "core personality" and the consistency of test-re-test changes with life situation changes. These hypotheses were tested by rating projective techniques and therapists' opinions on 50 or 60 individuals referred to the author by physicians, therapists, school authorities, and parents.

The method of study is substantiated by reference to a few, rather doubtful authorities. In a very limited review of the literature, the author deals with contrary opinions like Alice's Queen of Hearts.

In discussion of procedure, it is noted that the projective data are validated in light of therapists' opinions. It is further suggested that in the next volume, the therapeutic process will be validated by projective data. This predictor-validator ping-pong is characteristic of the uncritical, diffuse nature of the book, which is unimpressive even as a collection of interesting projective protocols. Occasional examples of Dr. Harrower's excellent descriptive analysis of test material are refreshing but infrequent.

As a descriptive study, the book is inadequate, even confusing. The author emphasizes the preliminary nature of this work in the Introduction. The book as a whole certainly reflects this.

THEODORE H. BLAU
Tampa, Florida

Ledwith, Nettie H. *Rorschach responses of elementary school children.* Pittsburgh: Univ. Pittsburgh Press, 1959.

The purpose of the project reported in this publication was the study of normally functioning children. The information provided is based on a group of one hundred sixty children from various school systems of Pittsburgh and the surrounding area. Rorschach records were obtained from these children annually beginning with the first grade. In order to observe the possible effects of repeated testing, a control group of approximately the same number was used. Data from some other tests (intelligence, reading and human figure drawing) were obtained but reported only incidentally here.

The Rorschach data are presented in great detail with much information about the formal characteristics of the responses at the various age levels. No attempt at interpretation is offered but a number of records are included to demonstrate the changing protocols of the same child as he appears at the different age levels.

The presentation is of little value to those who are seeking "ways of interpreting" records. However, there is a great deal of usefulness in terms of the opportunity to become familiar with the records of normally functioning children, especially in terms of the developmental process. This is, of course, not unique to this book. The limitation is, obviously, that the norms are based on a relatively small and homogeneous population. Nevertheless it has value in that enough of such studies will make it possible for the users of the Rorschach to get objective data to compare subjective impressions. The Ames et al. (Child Rorschach Responses, 1952) publication deals with much similar material although their book does include interpreted materials. While Ledwith does not offer interpretive material, it is possible to make some comparisons of content from the sample records included. This reviewer has always been puzzled by the aggressive content in the Ames sample. The records of the seven year olds in the Ledwith study produce records which seem more reality oriented and less driven by aggression. It is also interesting to note that the children in the Ames study show greater emotional reactivity on the basis of the difference in the mean sum C's, i.e., 2.89 to 1.6. These differences are pointed out to re-emphasize the importance of using the normative findings in either study with considerable caution.

One advantage to many American readers is the fact that Ledwith uses a scoring system with which many in this country are familiar.

MORTIMER M. MEYER
Los Angeles

Tomkins, Silvan S. and Miner, John B. *PAT Interpretation.* Springer Publishing Company, Inc., New York, 1959. 184 pp.

The rationale of the Tomkins-Horn Picture Arrangement Test, PAT, assumes that the most useful information about a person deals with that individual's distinctive behaviors. The logic of test interpretation thus rests upon the response which is rare or improbable when one compares one subject with all others but which is very frequent for the person under investigation. The data used are the sequences in which the subject orders 25 sets of three pictures. With consistency and scientific honesty, *The Tomkins-Horn Picture Arrangement Test* presents the reasoning and decisions made when constructing a test in which this rationale was followed and in which explicitly no contemporary theory of personality was felt to be powerful enough to determine the test content or interpretation. The result is a stimulating case history in science. While the reader might well disagree with many of the authors' decisions, in supporting his disagreements the reader would have to do some thinking and come to greater understanding of his own position.

In view of this background, *PAT Interpretation*, a book of interpretations of PAT protocols, is somewhat disappointing. Some of the reasons for this may be traced to the derivation of the test. With no particular theory of personality, the test has no particular focus or purpose. Any number of scales might have been derived, and indeed a great number of keys are presented. The areas covered by these keys—social orientation, optimism-pessimism, and level of functioning—were, in the authors' words, selected by "prejudice and hunch, both personal and professional." The difficulties in PAT scoring are not reduced by the presence of three sets of norms: age, I.Q., and education. Since an individual falls into all of these categories, the authors suggest averaging across the three norms to establish the probabilities of the occurrence of a response for an individual.

Having isolated the relevant (rare) responses, interpretation becomes the crucial problem. Assuming the validity of the statistical procedures used to designate relevant material, all the examiner knows is that a behavior is rare. At this point the authors assume a commonality of the perception of the stimuli and an equivalence of psychological meaning of identical stimulus orderings. The basis on which interpretation is made therefore is face validity. The strength of the use of protocols presented in *PAT Interpretation* lies in the public specification of how the material to be used was selected and in explicit statement of the probability levels from which inferences were made. That is, a part of the clinician's work, normally done implicitly, is made explicit. However, because of the lack of theory, the write-ups seem, at least to this reviewer, to validate antecedent descriptions of the subjects and to add little to enrich or extend knowledge of these people, or even, at times, to help to describe them as unique individuals. The result is essentially a summation of "signs" of dubious value and arbitrary selection.

In summary, *PAT Interpretation* is the fruit of the consistent application of a methodological viewpoint. Following through the sample cases for scoring and interpretation, the clinician will learn something about the most fascinating client he will ever have, himself. In terms of clinical application, an interesting set of stimuli has been added to the tester's armamentarium. While the work done by the authors is more than sufficient to merit a fair trial in the clinic, when dealing with the individual case the amount of time required for scoring, the tenuous validity of the instrument, and the fragmentary nature of the interpretations will probably lead to limited acceptance and use of the PAT.

LEONARD P. ULLMANN
Veterans Administration Hospital
Palo Alto, California

GENERAL NEWSLETTER

Perris, Carlo. Aplicaciones en el campo clinico de la investigacion del "effecto geometrico-cromatico." *Revista de Psicologia general y aplicada,* 1959, *14,* 33-40.

Analysis of responses of normal and schizophrenic subjects to colored lights.

Cohen-Seat, G. and Rebeillard, Monique. Test Filmico Tematico. *Revista de Psicologia general y aplicada,* 1959, *14,* 147-150.

Introduction to and first findings with a filmed version of the TAT.

Endara, Julio. Degradaciones y desvitalizaciones en los delincuentes a traves del Test de Rorschach. *Arch. de Criminologia, Neuro-psiquiatria y Disciplinas conexas,* 1959, *7,* 167-182.

Defects in identification among delinquents were studied in terms of Rorschach responses.

Leblanc, M. La problematique d'adaptation du T A T au Congo Belge. *Rev. de Psychologie appliquée,* 1958, *8,* 265-274.

A critical examination of Ombredane's adaptation of the TAT for use with natives of the Belgian Congo.

Shentoub, V. and Shentoub, S. A. Contribution a la recherche de la validation du T A T. *Rev. de Psychologie appliquée,* 1958, *8,* 275-341.

A comprehensive discussion exemplified with case materials of considerations in the interpretation of the TAT.

Rizzo, G. B. and Ferracuti, F. Impiego del test di Rorschach in criminologia clinica. *Rassegna di Studi penitenziari,* 1959, *1,* 23-50.

A discussion with case studies of the criminological applications of the Rorschach.

Bardet-Giraudon, C. Interet du test de Rorschach comme examen systematique du personnel hospitalier en debut de stage. *Bull. Groupem. Francais du Rorschach,* 1958, *10,* 3-8.

A brief report on the use of the Rorschach with African natives.

Burstin, J. and Stora, R. Contribution a l'etude de l'expression de l'hysterie dans le Rorschach. *Bull. Groupem. Francais du Rorschach,* 1958, *10,* 9-26.

Diagnostic features of hysteria in the Rorschach.

Cotte, S. Etude statistique sur les responses zoomorphiques (An. et And.) dans le test de Rorschach des enfants de 12 a 16 ans. *Bull. Groupem. Francais du Rorschach,* 1958, *10,* 27-32.

Normative data on animal responses in children's Rorschachs.

Helman, Z. Confrontation du Rorschach, corroboré par le dessin, avec l'examen electro-encephalographique chez un enfant epileptique suivi durant cinq ans. *Bull. Groupem. Francais du Rorschach,* 1958, *10,* 33-39.

Case study of successive examinations of an epileptic child.

Tocheport, Georges. La transformation pubertaire vue a travers le test de Rorschach. *Bull. Groupem. Francais du Rorschach,* 1958, *10,* 41-53.

A comparison of pubertal changes in the Rorschach among different ethnic groups.

Battisse, R. *Le test de Rorschach chez le garcon a la puberte.* Lyon: Bosc Freres, 1957, Pp. 79.

Normative data on 176 boys from ages 11 to 15.

Jensen, Arthur R. The reliability of projective techniques: review of the literature. The reliability of projective techniques: methodology. (Reprinted in monograph form from *Acta Psychologica*).

In the first paper the author summarizes and discusses reliability studies on a variety of projective techniques. In the second he considers the important variables and describes various methods for assessing reliability. The author offers free reprints in English to interested persons. Write to Arthur R. Jensen, Ph.D., Assistant Professor of Educational Psychology, School of Education, University of California, Berkeley 4.

Rorschach Japonica

The second volume of *Rorschachiana Japonica,* edited by Yasufumi Kataguchi, is now available. Articles are printed in Japanese with English abstracts of some of them. The table of contents is as follows.

Huzioka, Yosinaru. A consideration on the "kinds" of Rorschach response.

Ichimura, Jun and Yasaka, Fumiko. Relationships between sociometric status and Rorschach responses.

Ito, Masaaki and Sugimura, Shiro. Rorschach responses in the aged.

Murakami, Eiji; Uemoto, Yukio; Akitani, Tatsuko; Emi, Yoshitoshi; and Goto, Satoru. A normative study of Japanese responses on the Rorschach.

Nakae, Shotaro. A study on the therapeutic effects reflected upon the personality changes of "Nervositat" by Morita-therapy, by means of the Rorschach test.

Matsumura, Kohei; Matsumoto, Tomoko; and Arao, Yoshiko. Some techniques contributing to the development of the Rorschach: On the use of card-half-cutting method and the method of two-persons-speaking about each response.

Satake, Ryuzo, and Tanaka, Fujio. The influence of sodium amytal on Rorschach responses.

Takahashi, Shigeo. Relationships between the expressions of hostility in the Rorschach test and the Thematic Apperception Test.

Tsuji, Satoru, and Fujii, Hisakazu. Content analysis in the Rorschach test (II) : Animal responses.

Fujimoto, Fumio. Some differences in perceptual behavior between endogenous and exogenous mentally defective children by means of the Rorschach technique.

Kataguchi, Yasufumi. On the "Modified BRS".

Nitta, Ariko, and Okabe, Shozo. Interrelation between clinical symptoms and Rorschach protocols: on the observation of ten cases.

Takizawa, Kiyoko. On the concept "intelligence" in the Rorschach technique.

Ellenberger, Henri. The life and work of Hermann Rorschach.

Schachtel, E. G. Subjective definitions of the Rorschach test situation and their effect on test performance.

Tsutsui, Takeo. Harrower, M. R. and Steiner, M. E. "Large scale Rorschach technique".

Rin, Hsien. On the status quo of the Rorschach test in China.

ANNOUNCEMENTS

MEMBERSHIP ACTIONS

The Society for Projective Techniques announces with pleasure the following membership actions.

FELLOWS:

Higginson, Gordon K.
Kahn, Marvin W.
Murstein, Bernard I.
Rosenthal, Robert

ASSOCIATES:

Bissiri, Gerald R.
Coulter, Walter
Freschi, Vincent J.
Gibson, Robert L.
Hansen, Irvin A.
Kidorf, Irwin W.
McGreevey, James
Painting, Donald H.
Raaum, Carroll F.
Ritz, George H., Jr.
Sanchez-Garcia, Jose
Schaw, Louis C.
Thornton, Thomas

STUDENT AFFILIATE:

Landis, Bernard

WORKSHOP

1960 WORKSHOP IN THE RORSCHACH TECHNIQUE OF PERSONALITY DIAGNOSIS AND OTHER PROJECTIVE TECHNIQUES AS USED WITH CHILDREN

Jointly sponsored by
Claremont Graduate School in Claremont
and Children's Hospital, Los Angeles
Directed by
BRUNO KLOPFER

Time: January 4 to 15, 1960, at Children's Hospital, 4614 Sunset Blvd., L.A. 27, Calif.

The Workshop will be devoted to the study of projective techniques as used with children. It is planned for professional people who are competent in the basic use of Rorschach test. An opportunity will be given to examine and discuss the test protocols of children presenting a wide variety of disorders.

Courses (The number of two-hour sessions is indicated after each course): 1. Introductory and Survey Lectures (3); 2. Review of Administration and Scoring (6); 3. Case Study Seminar, Including Case History Analysis, Psychometric Material and Other Projective Material (14); 4. Thematic Test Analysis (6); 5. Lecture Series (7).

Claremont Graduate Credit: Qualified graduate students accepted for the Workshop may register for two units of credit (Psychology 243, or 244a, b, c).

All students wishing to qualify for graduate credit must apply to the Claremont Graduate School, Claremont, California, for the necessary forms before December 25, after they have been notified of admission to the Workshop.

Tuition: $50.00.

Applications: To apply for admission, write Dr. Bruno Klopfer, P.O. Box 2971, Carmel, California, before December 25, 1959.

REGIONAL REPORT

At a recent meeting of the Philadelphia Division, Society for Projective Techniques, the following officers were elected:

President:

Stanton B. Felzer, Ph.D.
2014 N. John Russell Circle
Elkins Park 17, Pa.

Secretary-Treasurer:

Mrs. Patricia M. Bricklin
78 Heartwood Road
Levittown, Pa.

The first meeting of the 1959-60 season will be held in October. Further information about this and other meetings can be obtained from the secretary.

BOOKS RECEIVED

The following books have been received and are available for review from Bertram R. Forer, 2170 Live Oak Dr., E., Los Angeles 28, Calif.

Helman, Zena. Rorschach et electroencephalogramme chez l'enfant epileptique.

Meili-Dworetzki, Gertrud. Lust und Angst.

Loosli-Usteri, Marguerite. Manuel pratique du test de Rorschach.

Walder, Hans. Drive structure and criminality.

INDEX

CONTENTS OF VOLUME 23 (1959)

ARTICLES

	ISSUE	PAGES
ABEL, Theodora and METRAUX, Rhoda. Sex differences in a negro peasant community: Montserrat, B.W.I.	2	127–133
AINSWORTH, Mary D. and KUETHE, J. L. Texture responses in the Rorschach and in a sorting test	4	391–402
AMES, Louise B. Further check on the diagnostic validity of the Ames Danger Signals	3	291–298
ARNAUD, Sara H. A system for deriving quantitative Rorschach measures of certain psychological variables for group comparisons	4	403–411
BAUGHMAN, E. E. The effect of inquiry method on Rorschach color and shading scores	1	3–7
BERGER, L. Crossvalidation of "primary" and "reactive" personality patterns with non-ulcer surgical patients	1	8–11
BERGER, L. (See also Lasky, J. J.)		
BIRCH, H. G. and DILLER, L. Rorschach signs of organicity: A physiological basis for perceptual disturbances	2	184–197
BUTLER, R. L. and MARCUSE, F. L. Sex identification at different ages using the Draw-A-Person Test	3	299–302
CAMPBELL, Frances A. and FIDDLEMAN, P. B. The effect of examiner status upon Rorschach performance	3	303–306
CHARNY, I. W. A normative study of Rorschach "sex populars" for males	1	12–23
CHRISTIANSEN, K. (See Dana, R. H.)		
CLAWSON, Aileen. The Bender Visual Motor Gestalt Test as an index of emotional disturbance in children	2	198–206
COULTER, W. M. The Szondi Test and the prediction of anti-social behavior	1	24–29
CUMMING, Elaine (See Henry, W. E.)		
DANA, R. H. The Perceptual Organization T A T Score: Number, order and frequency of components	3	307–310
DANA, R. H. and CHRISTIANSEN, K. Repression and psychopathology	4	412–416
DEAN, S. I. A note on female Blacky protocols	4	417
DILLER, L. (See Birch, H. G.)		
ENGEL, Cynthia. The relationship between Rorschach responses and attitudes toward parents	3	311–314
EXNER, J. E. The influence of chromatic and achromatic color in the Rorschach	4	418–425
FARBEROW, N. L. Validity and methodology in projective tests	3	282–286
FARLEY, Jane (See Henry, W. E.)		
FIDDLEMAN, P. B. (See Campbell, F. A.)		
FISKE, D. W. Variability of responses and the stability of scores and interpretations of projective protocols	3	263–267
FORSYTH, R. P. The influence of color, shading and Welsh Anxiety Level on Elizur Rorschach content test analyses of anxiety and hostility	2	207–213
FUSCHILLO, Jean (See Spivack, G.)		
GORDON, J. E. Rorschach responses as verbal behavior	4	426–428
GREENWALD, A. F. Affective complexity and psychotherapy	4	429–435
HAMMER, E. F. Critiques of Swensen's "Empirical evaluations of human figure drawings"	1	30–32
HENRY, W. E. and FARLEY, Jane. A study in validation of the Thematic Apperception Test	3	273–277
HENRY, W. E. and CUMMING, Elaine Personality Development in Adulthood and Old Age	4	383–390
HERTZ, Marguerite R. The use and misuse of the Rorschach method. I. Variations in Rorschach procedure	1	33–48

	Issue	Pages
HOOKER, Evelyn. What is a criterion?	3	278–281
HURWITZ, I. (See Sjostedt, Elsie M.)		
KATAGUCHI, Yasufumi. Rorschach Schizophrenic Score (RSS)	2	214–222
KERMAN, E. F. Cypress Knees and the blind	1	49–56
KRAGH, Ulf. Types of pre-cognitive defensive organization in a tachistoscopic experiment	3	315–322
KUETHE, J. L. (See Ainsworth, Mary D.)		
LASKY, J. J. and BERGER, L. Blacky Test scores before and after genito-urinary surgery	1	57–58
LEBO, D. and SHERRY, P. J. Visual and vocal presentation of T A T descriptions	1	59–63
LESSER, G. S. Religion and the defensive responses in children's fantasy	1	64–68
LEVINE, D. Rorschach genetic-level and mental disorder	4	436–439
LEVINE, D. (See Piotrowski, Z. A.)		
LEVINE, M. (See Spivack, G.)		
LITTLE, K. B. Problems in the validation of projective techniques	3	287–290
LO CASCIO, R. (See Nelson, M. O.)		
LORENZ, Maria. Language as index to perceptual modes	4	440–452
LOVELAND, Nathene T. and SINGER, Margaret T. Projective test assessment of the effects of sleep deprivation	3	323–334
LYNN, D. B. and LYNN, Rosalie. The Structural Doll Play Test as a projective technique for use with children	3	335–344
MacBRAYER, Caroline T. Relationship between story length and situational validity of the T A T	3	345–350
MAGNUSSEN, M. G. The Blacky pictures as personality measures for undergraduate areas of specialization	3	351–353
MARCUSE, F. L. (See Butler, R. L.; Starr, S.)		
MARKS, J. B. Rorschach water responses in alcoholics: levels of content analysis and consensual validation	1	69–71
MAYMAN, M. Style, focus, language and content of an ideal psychological test report	4	453–458
MEEHL, P. E. Structured and projective tests: some common problems in validation	3	268–272
METRAUX, Rhoda (See Abel, Theodora, M.)		
NELSON, M. O.; WOLFSON, W. and LO CASCIO, R. Sexual identification in responses to Rorschach card III	3	354–356
NITSCHE, C. J. and THOM, W. Childrens' Like and Dislike drawings	1	72
PAUL, C. (See Rogers, A. H.)		
PIOTROWSKI, Z. A. and LEVINE, D. A case illustrating the concept of the Alpha Schizophrenic	2	223–236
ROGERS, A. H. and PAUL, C. Impunitiveness and unwitting self-evaluation	4	459–461
ROSENTHAL, R. The experimental induction of the defense mechanism of projection	3	357–364
SHNEIDMAN, E. S. Suggestions for the delineation of validational studies	3	259–262
SHAPIRO, D. The integration of determinants and content in Rorschach interpretation	3	365–373
SHERRY, P. J. (See Lebo, D.)		
SILVERSTEIN, A. B. Identification with same-sex and opposite-sex figures in thematic apperception	1	73–75
SINGER, Margaret T. (See Loveland, Nathene T.)		
SJOSTEDT, Elsie M. and HURWITZ, I. A developmental study of sexual functioning by means of a cognitive analysis	2	237–246
SOLKOFF, N. Effects of a variation in instructions and pictorial stimuli on responses to T A T-like cards	1	76–82
SPIVACK, G, LEVINE, M., FUSCHILLO, J. and TAVERNIER, Ann. Rorschach movement responses and inhibition processes in adolescents	4	462–466

	ISSUE	PAGES
STARR, S. and MARCUSE, F. L. Reliability in the 'Draw a Person' Test	1	83–86
TAVERNIER, Ann (See Spivack, G.)		
THOM, W. (See Nitsche, C. J.)		
WILENSKY, H. Rorschach developmental level and social participation of chronic schizophrenics	1	87–92
WOLFSON, W. (See Nelson, M. O.)		

BOOK REVIEWS

(Reviewer's name appears in parentheses after book title.)

	ISSUE	PAGES
AMES, Louise B., METRAUX, Ruth W. and WALKER, R. N. *Adolescent Rorschach responses.* (Mortimer M. Meyer)	4	467–468
BASS, B. and BERG, I. *Objective approaches to personality assessment.* (Wilson H. Guertin)	4	468–470
BELLAK, L., OSTOW, M., PUMPIAN-MINDLIN, E., STANTON, A. H. and SZASZ, T. *Conceptual and methodological problems in psychoanalysis.* (Albert I. Rabin)	4	470–471
BUROS, Oscar K. (Ed.) The fifth mental measurements year book (Bertram R. Forer)	4	471–472
CALIGOR, L. *A new approach to figure drawings.* (Emanuel F. Hammer)	4	472–473
FREUD, S. *Collected papers.* (Bertram R. Forer)	2	247
HAMMER, E. F. *The clinical application of projective drawings.* (Walter G. Klopfer)	1	93–95
HARROWER, Molly. *Personality change and development.* (Theodore H. Blau)	4	473–474
HOLT, R. R. and LUBORSKY, L. *Personality patterns of psychiatrists.* (Robert Rosenthal)	2	248–250
LEDWITH, Nettie H. *Rorschach responses of elementary school children* (Mortimer M. Meyer)	4	474
MIRA y LOPEZ, E. *Myokinetic psychodiagnosis.* (Mortimer M. Meyer)	3	374
NEL, B. F. and ROBBERTSE, P. M. *'n inleiding tot die Rorschach-inkvlektoets.* (Bertram R. Forer)	1	95
REVERS, W. J. *Der Thematische Apperzeptionstest* (T A T) (Reuben Fine)	3	374
TOMKINS, S. S. and MINER, J. B. *P A T interpretation* (Leonard P. Ullman)	4	474–475
ZUCKER, Luise J. *Ego structure in paranoid schizophrenia.* (Vita S. Sommers)	1	95–96

SPECIAL BACK VOLUME OFFER

Because of the demand for earlier out-of-print volumes of the Journal of Projective Techniques, a limited number have been reprinted* We are now in a position to make the following specially-priced offer.

Set of ten volumes: 11 through 20 (1947-1956)	$50.00	(Foreign $55.00)
Volumes 11 and 12 combined	$ 6.00	(Foreign $ 6.50)
Volumes 13 through 22, individually	$ 6.00	(Foreign $ 6.50)
Volume 23 and Current subscription	$ 8.00	(Foreign $ 8.50)
Monograph No. 1 "Projective Techniques and Psychotherapy" by William Lundin	$1.50	($1.00 with set)
Monograph No. 2. "Manual for Make-A-Picture-Story (MAPS) Method" by Edwin Shneidman	$2.50	($2.00 with set)

* The first ten Volumes published in mimeographed form under the title, "Rorschach Research Exchange" are now available in photostatic or microfilm reproduction through National Library of Medicine, 7th St. and Independence Ave., S.W., Washington 25, D. C.

ORDER BLANK

Society for Projective Techniques and Rorschach Institute, Inc.
Adelphi College
Garden City, N. Y.

Enclosed find $__________ for the following order:

_______ sets of Volumes 11 through 20 at $50.00 (Foreign $55.00)

_______ sets of Volumes 11 and 12 at $6.00 (Foreign $6.50)

Volumes __________________ of Volumes 13 through 20 at $6.00 per volume (Foreign $6.50), Volume 23 at $8.00 (Foreign $8.50)

_______ Monograph No. 1 at $1.50 (with sets of 10 volumes $1.00)

_______ Monograph No. 2 at $2.50 (with sets of 10 volumes $2.00)

_______ Current subscription $8.00, foreign $8.50.

Name: (Please print) ______________________________

Street ______________________________

City ______________ Zone ________ State ______________